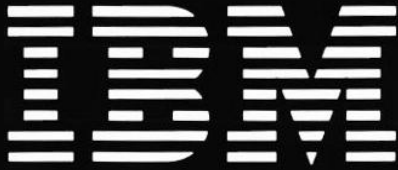


IBM Tools Base Administration Console for z/OS

IMS Administration Simplified and Modernized

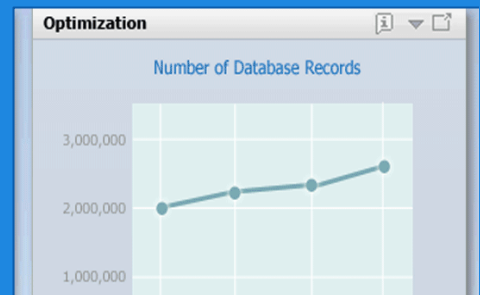


Summary		
Resource	Type	Overall
High-priority database	group	■
DBFSAMD1	dedb	■
DOHI0001	database	■
DOHI0002	database	●
DOHI0003	database	▲
DOHI0004	database	▲
DOHI0005	database	◆
DOHI0006	database	◆

Exceptions 4

Reorganization recommended
Exceptions as of Mon Oct 24 2011 18:00:38 PDT

- Critical (2)**
 - Fragmented free space
[Free space availability](#)
- Severe (1)**
- Warning (1)**



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A solution for modern challenges

IBM® Tools Base Administration Console for z/OS® (also referred to as Administration Console) consolidates key IMS™ information in an intuitive, graphical web interface. By viewing aggregate statistics, exception notifications, and historical data visualizations, you can spend less time collecting and analyzing data to find actionable insights. As an analysis accelerator, Administration Console is a strategic tool for the modern IMS shop, which must confront an increasing workload while contending with a decreasing number of experienced DBAs.

Such challenges strain IMS shops and force them into a reactive state. You might be responsible for hundreds if not thousands of databases, and so you manage by exception, fixing only the most critical and compromised databases while ignoring valuable performance tuning opportunities in others. Facing more work than can be done, you must continually prioritize and react only to your most urgent problems.

Yet discovering these problems can require laborious and time consuming data analysis, especially when the required data is generated by various tools and scattered across various reports. In these ISPF, text-based reports, trends are hidden and insights are obscured. Consequently, problems remain undetected despite the valuable time that you spend collecting and analyzing data.

Compounding the difficulty, the time of expert IMS DBAs is at a higher premium than ever because of the growing scarcity of IMS skills. As IMS DBAs retire from the workforce, their next-generation replacements have little or no IMS training. Consequently, strategic insights remain undiscovered by new DBAs who lack

IMS skills and by experienced DBAs who lack time. Both need a tool that illuminates insights, a tool that accelerates the new DBA's ability to understand and the experienced DBA's ability to act.

Features and benefits

Administration Console addresses many of the challenges that you face as an IMS DBA. It simplifies prioritization by providing holistic, aggregate statistics that enable you to immediately determine which databases need your attention. It simplifies data analysis by providing detailed, resource-specific statistics that enable you to do deeper analysis—analysis that can assist problem resolution, problem prevention, and performance tuning. And it does so all in a single web interface.

Specifically, Administration Console:

- Provides comprehensive and customizable views of your IMS environment. You can view summary performance data for your DBRC RECON groups as well as for those databases that are defined in your Monitor List, a list that is defined in Tools Base Autonomics Director for z/OS to enable databases for automatic monitoring and maintenance. You can create a customized view by creating groups of databases. For example, you can create a group of the databases that begin with a particular prefix, and you can quickly view summary performance data about the databases in that group (See Figure 1). You can then drill down, looking at detailed statistics for specific databases. These holistic views increase your efficiency by reducing the amount of time that you spend running and analyzing reports to obtain the information that you need.

Summary		
Resource	Type	Overall
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DOHI0003	database	
DOHI0004	database	
DOHI0005	database	
DOHI0006	database	

Figure 1. Summary performance data

- Organizes and displays exceptions. These exceptions are generated when database states cross thresholds that are specified in policies that you define in Tools Base Policy Services for z/OS. The ability to define a custom set of policies in Policy Services and to then use Administration Console to monitor exceptions to those policies provides you with peace of mind that you will be notified long before any of your monitored databases experience disruptive problems. This ability also allows you to focus on those databases that need your attention, eliminating unnecessary manual analysis and routine preemptive tuning.
- Builds on the exception notification capabilities provided by Policy Services and works closely with Autonomics Director to provide you with automatic recommendations to address certain types of database exceptions (See Figure 2). These recommendations reduce some of the overhead that's otherwise required to analyze a problem, allowing you to move more quickly from a potential problem to a resolution.
- Provides centralized access to reports that are generated by many IBM IMS Tools and that are stored in the IMS Tools Knowledge Base repository, a central repository that is provided by Tools Base IMS Tools Knowledge

Base for z/OS. You can search for reports by using a variety of search criteria including database name, job name, report name, or completion code. You can save frequently used search criteria so that the reports that you need are always just a click away.

- Uses a combination of SSL and your existing RACF® (or SAS equivalent) authentication to provide a secure user experience. SSL ensures secure end-to-end communication, while your existing z/OS authentication method, coupled with built-in application class and group authorization, controls who can log in to Administration Console. All z/OS actions are performed as the logged-in user, which means that users who log in to Administration Console have the same abilities that they have when they log in through TSO –no more, no less.
- Includes a robust integrated help system that documents how to use the product and includes relevant IMS reference information so that the information you need is at your fingertips. DBAs who are less familiar with IMS will find this information invaluable to shortening their IMS learning curve.



Figure 2. Exception notifications with recommendation

Architecture

Administration Console ships as a component of IBM Tools Base for z/OS (also referred to as Tools Base), a no-cost PID that is a prerequisite for all of the IMS Tools Solution Packs.

After Tools Base is installed via SMP/E, you then install Administration Console by running a simple .exe installation program. Figure 3 illustrates a typical Administration Console environment.

To understand the Administration Console environment, view it as consisting of the following parts:

- The back end, which is your traditional IMS environment that consists of those components that run on z/OS: IMS and supporting IMS Tools such as Autonomics Director, Policy Services, IMS Tools Knowledge Base, IMS Database Solution Pack, and IMS Fast Path Solution Pack.
- Distributed Access Infrastructure, which is

also included in Tools Base and which also runs on z/OS. This component provides distributed clients access to IMS and IMS Tools through a centrally controlled standard TCP/IP socket.

- An application server installed on a centrally located mid-tier server. Administration Console includes WebSphere® Application Server CE, which is a light-weight application server, or you can use an existing application server.
- A client machine with Internet connectivity and a supported web browser.

Scenarios

Administration Console supports progressive monitoring of IMS resources. You can determine the databases that most urgently need your attention, view exceptions and recommendations for these databases, and analyze charts and reports for in-depth problem determination and action validation. The following scenarios illustrate how you can use Administration Console to monitor resources with this drill-down approach.

Scenario: Managing a group of databases by exception

If you're a DBA, you need a bird's-eye view of the databases that you manage so that you can quickly see which databases require your attention. Assume that you have a group of mission-critical databases that you want to view on a daily basis. Instead of individually viewing the status of each

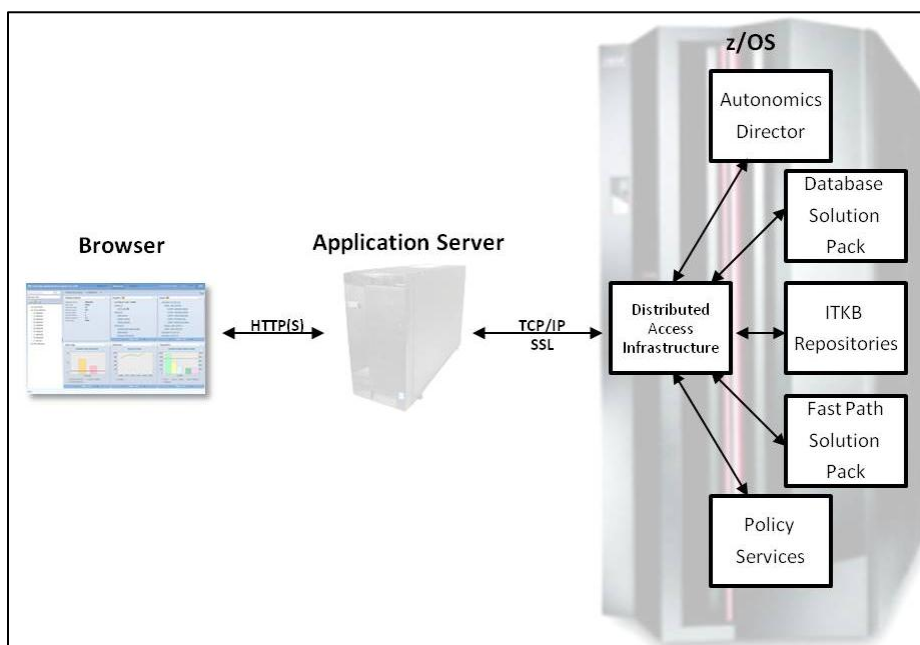


Figure 3. Administration Console architecture



database, you can create a group of your critical databases from the Administration Console Resources page. When you view the group, Administration Console automatically generates a summary table that displays information such as the number of exceptions, recommendations, and reports for each database. With the summary table, you can easily scan the health of your databases and then drill down to problematic databases. You no longer have to sift through individual database reports or be notified of database issues after a problem has already occurred.

After scanning the summary table, assume that you see two critical exceptions for one of your HIDAM databases. You drill down into the database, where Administration Console provides a dashboard of informational widgets. In the Exceptions widget, you see that the database has two exceptions listed in the critical category. The database has a data set extent availability exception and a variable-length segment splits exception. By clicking on the data set extent availability exception, you learn that the number of available data set extents for the database is low, and if the exception is not resolved, no new segments can be inserted into the database data set.

Similarly, you learn that the variable-length segment splits exception is high, increasing the number of I/O operations. You want to respond to these exceptions, but first you want to verify any possible actions.

Scenario: Verifying an exception

Administration Console not only shows exceptions, but it also provides rich graphical charts that can help you quickly identify trends. To quickly verify the data set extents availability exception, you drill down into the problematic data set and view the Available Data Set Extents chart, which is located in the

Space Use widget. You want to see an expanded time line for the chart to see the historical trend, so you maximize the chart. By viewing the chart you see that the available data set extents are declining, but the chart shows almost a flat line, indicating that the rate of decline is very slow. If the trend continues, you project that the available data set extents are sufficient for some time.

You know that this exception must eventually be resolved, but you do not want to continually see this exception until it becomes a problem. So with Policy Services, you edit the policy on this database and adjust the critical threshold. Based on the historical trend, you lower the available data set extents critical threshold to a value that better represents a condition that will require action.

Scenario: Acting on an exception

The variable-length segment splits exception also has a corresponding data sensor chart in the Fragmentation widget. In contrast, this chart shows a steep increase in the variable-length segment splits, requiring immediate action on the database. Otherwise, the database's performance could decline. The percentage of split variable-length segments shows a steep increase within a short time frame. Fortunately, Administration Console does not just provide exception information, but also recommended actions that can help you resolve exceptions. The variable-length segment splits exception has a corresponding recommendation, which is indicated by a recommendation icon. After clicking on the exception, you learn that the recommended action is to reorganize the database. However, you remember recently reorganizing this database, so you want to verify that a reorganization will be effective.



After each reorganization, you know that a Database Diagnostics report is generated by IMS Database Reorganization Expert for z/OS, a tool within the IMS Database Solution Pack for z/OS. On the Reports page, you build a search for the Database Diagnostics report and see that this database was reorganized three months ago. By viewing the Segment Statistics report, you also see that the reorganization brought the split segments to zero after each reorganization (See Figure 4).

With the trend and report information that you gathered from Administration Console, you decide that a reorganization is the proper course of action. A reorganization will bring your variable-length segment splits to zero and prevent any potential performance issues from split segments.

Conclusion

In today's IMS shop, you face unprecedented challenges as databases grow in complexity and IMS skills grow in scarcity. Spread too thin, you must work in a continuous process of prioritization and reactionary problem solving. In this strained status quo, insights remain undiscovered and opportunities remain unpursued. Your productivity and decisiveness can be enhanced by functionality that assists

intelligent prioritization and that highlights opportunities for system improvement.

Administration Console provides this functionality by combining some of the most beneficial features of IMS Tools products into one easy-to-use interface. Prioritization is simplified by aggregate statistics on database health. Problem resolution is accelerated by exception notifications with automatic recommendations. With database administration simplified by these features, you can direct more time and attention into proactive improvements for your IMS environment. Analyze the graphical charts to see revealing spikes and trends in your database statistics. Extend your analysis by retrieving the reports that you need without leaving the interface. Use this information to tune your environment and make gains in efficiency and performance.

Administration Console modernizes the IMS shop by introducing an intuitive graphical interface, a missing feature in the past. With this interface, monitoring your increasingly complex environment becomes both easier and faster, making Administration Console a strategic asset for the future.

```
<<< VARIABLE LENGTH SEGMENT SPLIT STATISTICS >>>
<-NUMBER OF OCCURRENCES->  PCT OF  <----PFX + DATA IN---->
SEGMENT                    TOTAL    SPLIT  SPLIT  SAME BLOCK  DIFF BLOCK
-----                    -
ROOTLEV1                   10      0      0.0%    0           0
DEP1LEV2                   13      0      0.0%    0           0
DEP2LEV2                   20      0      0.0%    0           0
DEP3LEV2                   13      0      0.0%    0           0
DEP4LEV3                   13      0      0.0%    0           0
DEP5LEV3                    3      0      0.0%    0           0
DEP6LEV3                    3      0      0.0%    0           0
-----                    -
```

Figure 4. Variable-length segment split section of the Segment Statistics report for the HIDAM database



Resources

Tools Base for z/OS

<http://www-01.ibm.com/software/data/db2imstools/imstools/ims-base-solution-pack>

IMS Tools products

<http://www-01.ibm.com/software/data/db2imstools/products/ims-tools.html>

Information Management Software for z/OS Solutions Information Center

<http://publib.boulder.ibm.com/infocenter/dzichelp/>

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