

The DBA and Computer Operations

This chapter provides an overview on the job of a database administrator. It covers the following topics:

- Influence of the Database Administrator
 - Scheduling Computer Time
 - Operating Procedures
 - Restart and Recovery Procedures
 - Database Utilities
 - Working with Software AG
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Influence of the Database Administrator

The DBA carries the responsibility for ensuring that the computer operations function performs its duties with regard to the database environment. This responsibility is in terms of assisting the operations function to establish database related operating procedures, restart and recovery procedures, special database utilities and schedules for computer time for database related work.

The DBA also has a role in actually carrying out the day-to-day administration of the procedures and safeguards associated with the use of the database.

The DBA will ensure that the operational procedures are correctly adhered to, that dumps and logs are correctly taken and the DBA may also carry out periodic tests of the recovery systems.

In any emergency situation, the DBA may be involved in controlling recovery, discussing problems with users and generally working out ways of minimizing the disruption.

Scheduling Computer Time

The DBA should exercise some degree of control over the scheduling of the computer, in order to facilitate scheduling around a problem and to provide for priority use of the database in emergency situations.

While direct control over the computer schedule will reside with the computer operations personnel, it is, nevertheless, advisable to allow the DBA some degree of discretion in determining the schedule of events as they relate to database processing. In doing so, (for example) problems involving currency of update can be avoided and response time requirements during relatively infrequent peak load times can be satisfied without undue effort.

Operating Procedures

The DBA is responsible for working with computer operations personnel in order to develop formal and documented procedures for operating database-related jobs on the computer.

Among the areas that should be considered are

- loading a new database;
- running database utilities;
- maintaining the data dictionary;
- maintaining the database;
- backup procedures;
- restart/recovery procedures;
- production and testing requirements.

Restart and Recovery Procedures

The DBA must ensure that the database can be restored to its proper state in the event of destruction or damage. Restart and recovery is thus an important protection consideration and the DBA must develop standards, procedures, and rules to provide such a capability.

Computer operations personnel must be educated in and adhere to these standards and procedures in order to ensure that the recovery and restart of the database can be accomplished without loss of data integrity.

Any variations to standard practice (for example, a particular sequence of programs to be run after restart for a particular application system) should be recorded in the computer operations run book for that application.

Database Utilities

The DBA is responsible for controlling the use of Adabas utilities and for developing or acquiring specialized utilities to facilitate certain functions involving the database. These utilities may include

- creation of test databases of suitable size which include all the features of real-life databases (ADALOD utility);
- save/restore individual files or the entire database (ADASAV utility);
- provision of automated reports reflecting the integrity of the data in the database (ADAREP utility);
- provision of automatic reporting of security violations (ADALOG facility).

The DBA should retain control over when the utilities are run, including who is authorized to use them. The DBA's permission should be sought before a utility is used (except, of course, in the case of well-documented and tested recovery/restart procedures).

Working with Software AG

The DBA should be the primary contact between the organization and Software AG. The DBA's involvement with Software AG includes

- obtaining education and training for the organization's staff;
- receiving and installing new releases and system changes to the Adabas nucleus and utilities;
- receiving and distributing electronic documentation, manuals and other literature;
- obtaining advice;
- reporting problems;
- suggesting improvements to the system.

This section discusses these interfaces in detail.

Training and Education

Software AG supplies two types of education and training courses:

<i>In-house</i>	Tailored to the particular requirements of an individual user site.
<i>Open</i>	General information; any user may participate.

In-house training is normally given when the Adabas system is first installed, although the DBA may from time to time have sufficient need for additional courses of this type. Such courses can be tailored to meet specific customer requirements and training objectives.

An open course is more general, and although thorough, it may not meet all of the DBA-defined specific requirements. As a result, the DBA may need to arrange supplementary training to meet objectives.

Training is offered by Software AG in the following areas:

- Application programming with Adabas;
- Database design;
- Query facilities (for example, Natural);
- Internals of the Adabas system.

Detailed descriptions of training, including recommended sequences, prerequisites, schedules, and enrollment information are available from your Software AG representative.

New Releases

When a new release has been thoroughly checked out, it will automatically be distributed to all Adabas user sites together with instructions which cover the means of effecting a transfer to the new release.

The new release should be thoroughly checked out by the DBA before production work is transferred to it. If this is the case, the DBA may find that a standard set of test programs, in the form of a prepared job stream, may be the best way of checking that the functions previously available still operate correctly. Such a test job stream will grow with each new function provided by Adabas.

Distribution of Documentation and Updates

As the sole recipient of new literature from Software AG, the DBA should keep a record of the copies distributed to ensure that the literature is kept as up-to-date as possible. A register of authorized document holders is easily maintained and is perhaps the easiest way to perform this part of the DBA's responsibilities.

Advice or Consultancy from Software AG

During the initial installation of the Adabas system, assistance is provided to install Adabas into the user's system library, generate a test database, and perform checkout tests.

Beyond this initial period, there may be occasions when the DBA feels the need for advice or consultancy from Software AG. Such a request should always come from the DBA.

Software AG will keep the DBA informed of any planned extensions to the Adabas package. As a general rule, such extensions will be included in the training courses as soon as they have been firmly defined by Software AG. The DBA, however, may need to pass on such information to existing projects in order that advantage can be taken of the new facilities as soon as they become available, thus eliminating the need for later redesign or reprogramming.

Problem Reporting

If a problem arises in the database, the DBA will most often be able to solve them without contacting Software AG. Nonetheless, Software AG offers comprehensive support to help restore operations as quickly as possible. The DBA can add to the effectiveness of this support by ensuring that the problem is defined accurately and succinctly to Software AG's technical support team. All available output should first be noted and/or collected for eventual reference and, if necessary and requested, should be sent to Software AG.

DBMS Improvement

Potential areas for system improvement logically occur as a result of the monitoring, auditing and operations activities. The DBA will have the responsibility for evaluating these potential enhancements and initiating any improvement activities. Software AG encourages and supports User Groups for its systems, which are an excellent forum for discussing such enhancements. Users can start the process by submitting a change/enhancement request to the appropriate User Group representative.