

General Information

Release 6.0



IBM Application Program Driver/400 Version 3

GH12-6401-00

General Information

Release 6.0

Note!

Before using this information and the product it supports, be sure to read the general information under "Notices" on page iv.

First Edition, September 1995

This edition applies to Release 6 Modification Level 0 of IBM Application Program Driver/400 Version 3, Program Number 5716-PD1, and to all subsequent releases and modifications until otherwise indicated in new editions or technical newsletters. Make sure you are using the correct edition for the level of the product.

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Introduction

In today's enterprises, people are confronted with an increasing number of applications. The applications differ not only in their functionality, but also in their user interfaces. It is often difficult for users to remember how to access and navigate within them.

IBM Application Program Driver/400 Version 3, in the following referred to as APD/400, integrates Application System/400* (AS/400*) applications into a common processing environment. You can integrate any IBM* AS/400 applications, applications of other companies or contractors, and, of course, your own applications.

APD/400 also provides a standardized interface where functions common to the integrated applications can be used in the same way. To users it no longer appears like they are using different applications, but one application with several functions.

As described later, APD/400 not only facilitates the work of end users, but also of system operators, application administrators, and application developers.

What Is New

APD/400 offers the following enhancements to Version 2, Release 3:

The performance of menu bar and pull-down handling has been improved.

Menu support for Info Window II is given.

The application interface program interface has been enhanced to allow applications running and APD/400 reduce program load time.

Several functions have been made switchable to improve performance of the interactive part of APD/400:

- Use Authorization Checking
- Use Exclusion Checking
- Work with Data Sets
- Work with Defaults in APIs.

The following major changes have been made since Version 3 Release 1:

- The API CHKEXC has been enhanced in two points.
 - It is possible to check/set exclusion for other than current data set.
 - If an exclusion is defined, information about this exclusion is provided via the API.

Features

To facilitate the work of end users, system operators, application administrators, and application developers, APD/400 offers the features shown in the following figure.

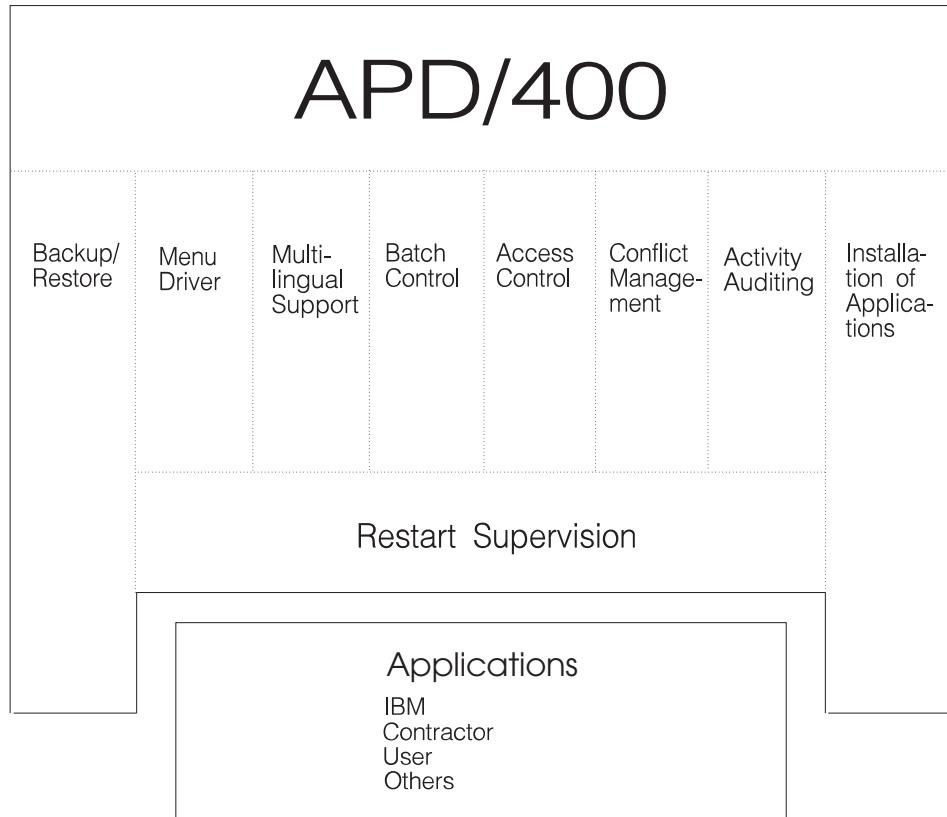


Figure 1. Features of APD/400.

Menu Driver

All functions are menu-driven. Users can decide on the contents of the **initial menu** displayed after signing on to APD/400, and they can even create a **personal menu** containing the most-used application tasks. The functions can be initiated through **menu bars**, **pull-downs**, and **pop-up windows**, or through **expert codes**. For expert codes, a prompt is available, where users can select from a list of available codes.

Multilingual Support

APD/400 offers multilingual support for itself and the applications running under it. This means, that different users can work with APD/400 and the integrated applications in different languages at the same time.

You can specify a language priority list. The first language in that list is the most-preferred language. APD/400 and the applications called appear in the language with the highest priority. However, you can switch to another language at any time.

Batch Control

Batch jobs can be performed without any user interaction as background processes, allowing you to continue working while these jobs are running. When submitting a batch job you can choose between immediate, delayed, or recurring processing.

After a batch job has been submitted, you can still change the scheduling parameters and let the job be processed earlier, later, or according to a different time pattern than originally specified.

In case a job fails, you can interactively restart it.

Access Control

The administrator can interactively grant or revoke access authorizations. APD/400 supports access control for different installations of one application, menus, and menu, menu bar, pull-down choices, and so on.

To ease administration of access authorizations, the application administrator does not have to assign authorizations for each individual user. Instead, users with the same access rights are grouped into user groups. Then, authorizations are defined for the group as a whole.

If a user group is not authorized to access, for example, a certain menu, this menu will not be displayed to the users of this group and they are not able to invoke the tasks on this menu through expert codes.

To save performance, you can switch off access control at application level.

Conflict Management

APD/400 offers conflict management for tasks and Operating System/400* (OS/400*) objects. A conflict occurs when incompatible tasks are performed simultaneously. For example, a save operation cannot be performed while the data to be saved is being changed or, one object cannot be changed by two concurrent tasks.

APD/400 implements conflict management through exclusions and exclusion lists. For example, the application administrator specifies that task A excludes task B. APD/400 then automatically creates the reverse exclusion.

Again, exclusions do not have to be defined individually. To reduce the administrative effort, tasks and objects with the same exclusions can be grouped into exclusion lists.

To save performance, you can switch off conflict management at application level.

Activity Auditing

Activity auditing provides you with statistical information about system activities in APD/400. For each application, the application administrator can select the functions to be audited. Then, every event is recorded and a record is written to the audit file. An event is, for example, when a user starts or ends a task.

Sample queries are provided, but you can change these queries or create new ones. With a query, the application administrator can, for example, create a report on who did what, and when.

Restart Supervision

For each application task, the administrator can specify what happens when a task fails, for example, due to an abnormal end:

- The user is notified of the failure
- The user is not notified of the failure
- A restart is mandatory.

When the user signs on again, APD/400 restarts the last menu choice called. The user can bypass this autorestart.

Backup and Restore

The backup and restore facility lets you define the following:

- Save intervals
- Number of generations saved
- Restore sequences
- Backup volume IDs
- Dependencies.

Backups can be performed either on a scheduled or an individual basis. Up to nine generations of backup tapes can be kept for all libraries and folders. After completion of the backup, history data (a record of the backup procedure) is written to a history data tape. APD/400 automatically restores data. You can select to restore either all or individual libraries and folders.

Installation of Applications

Under APD/400, applications are installed interactively. The application administrator is led through a series of displays that explain the steps required to install the selected application from tape or tape cartridge. If you do not want to use the installation procedure provided, you can use a user exit to install applications with your own procedure.

Applications can be installed several times. If the application is coded correspondingly, you can also specify a certain data set to be used.

Benefits

Using APD/400 in your enterprise offers the benefits described in the following.

Standardized Interface

APD/400 offers a standardized interface for all integrated applications that does not require any special AS/400 knowledge from the end user. All applications and the functions contained in them are called in the same way. To users it appears as if they are using one application with several functions, and not several different applications.

Once familiar with the interface, users can easily work with any application installed under APD/400. This reduces the learning curve and the possibility of user errors, saves time, and so increases productivity.

Increased Productivity

Productivity is not only increased through the ease of use of the standardized interface. There are more features that help to save time:

- Users can easily switch between applications or different installations of the same application. You do not have to leave one application, start another one, move to the required display, perform a task, leave the application, and finally restart the first application. Just leave the active application session and switch to another one.
- Users can also switch between different installations of one application. There can be, for example, installations for production, testing, education, and what-if calculations. You can perform a test in the testing environment, and then switch to the production environment and implement what was tested.
- There are various shortcuts you can use. If you have many applications installed under APD/400, the initial menu provides a selection restricted to the most-used applications. The personal menu that users can individually define, contains the most used tasks of one or more applications this user regularly works with. So, for example, there is no need to lose time while moving through a hierarchy of menus to access a task that has to be performed on a daily basis. Simply put it on the personal menu from where it can be accessed immediately.
- Within an application, you can invoke functions either through menus or expert codes. Expert codes also provide a shortcut as you call the required function directly, without having to go through various menus.

Increased Security

APD/400 increases data security through functions like access control, user group management, activity auditing, conflict management, and save and restore:

Access control

Through access control you can protect individual applications, installations, and application data sets from unauthorized use, and also individual functions within an application. If, for example, a user is not authorized

to use a certain menu choice, it will not appear on the display and is not accessible through an expert code.

User group management	The user group management function enables you to combine groups of users with the same processing characteristics, for example, users with the same access rights for applications and data sets. User group management makes authorization control transparent and easy to implement.
Activity auditing	Activity auditing helps you track changes made to data. For example, you can query how often certain data has been changed and by whom.
Conflict management	Conflict management prevents incompatible tasks from being performed simultaneously. This ensures data integrity.
Backup and restore	The backup and restore functions help you protect your information assets. Backups can be performed on a scheduled or an individual basis. APD/400 generates history data for each backup and restore operation.

Reduced Development Effort

Developing applications under APD/400 saves time and effort because, for many functions, you can use the facilities and services of APD/400 instead of manually programming these functions yourself.

You can interactively define the menu flow for an application, group displays, or create cascaded windows containing all the menus required to perform a task. You can also utilize the functions for authorization checking, exclusion control, installation support and so on, or use the user exits to implement your own functions.

“Developing Applications” on page 10 provides a scenario of how this works in practice.

Reduced Administration Effort

You can administer applications, user entries, authorizations, menus and menu headings, application data set entries, exclusions, batch support, audit support, and APD/400 parameters. The main advantages for the administrator are that all administrative functions are menu-driven and that all applications installed under APD/400 are administered in the same way.

Separated Data Sets

Within one application you can work with different data sets to clearly separate the data processed for different clients, or to distinguish between different projects or departments.

Simplified Customization

The following areas can be customized and adapted according to your needs:

Textual data

You can create or change textual data like helps and messages.

Menus and windows

You can specify how full-screen menus and windows are presented. The color and style of various components of displays and windows can be specified, including menu bar, title area, window border, menu choice area, and command line. An unlimited number of windows can be cascaded.

APD/400 provides **user exits** that can be used by your own programs. With a user exit you can invoke functions other than those implemented in APD/400. The available user exits enable you to:

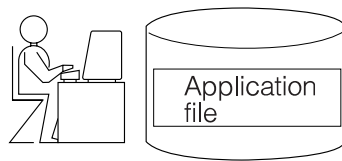
- Perform application-dependent activities prior to a save or restore operation
- Use a different method of authorization checking
- Use a different method of exclusion checking (conflict management)
- Override batch task parameters
- Perform postinstallation activities
- Use a different help system instead of the one provided by OS/400
- Administer data sets in a different way.

Developing Applications

As well as the advantage of a standardized interface that facilitates the work of end users and administrators, APD/400 offers the major benefit of saving time and effort when developing applications.

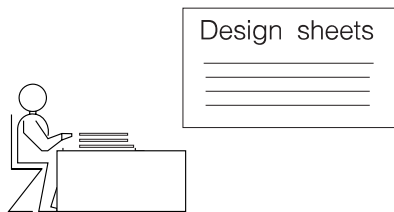
For new applications, the application developer creates records in existing APD/400 files to create exclusions, authorizations, and so on. This is done interactively using the *Administer Applications* function for developers.

The following scenario shows how you can use APD/400 when developing your own application.



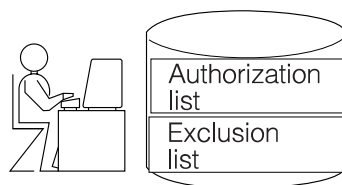
The APD/400 administrator does the following:

- Defines the new application to APD/400
- Provides an application definition
- Specifies the name of the application administrator.

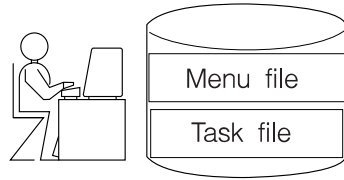


In the design phase, the application developer performs the following tasks:

- Designs the menu tree
- Identifies menus and tasks subject to authorizations and exclusions
- Creates a naming scheme for programs called by the application.



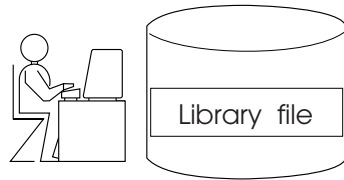
- The next step for the application developer is to define authorization and exclusion lists for the tasks and menus.



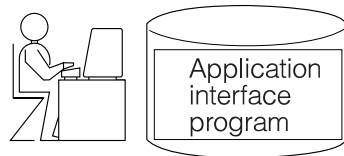
- When the menu design is completed and the hierarchy of menus is clear, the application developer describes the menu tree in APD/400. The procedure for this is bottom-up. The application developer does the following:

1. Enters the tasks that can be performed and specifies the type of processing, that is, batch or interactive. A task can be a menu bar, system command, pull-down, processing list, menu, or a program.
2. Defines the menus that contain the tasks.
3. Specifies the higher-level menus.
4. Groups menus or cascades windows for a sequence of menus required to perform one task.

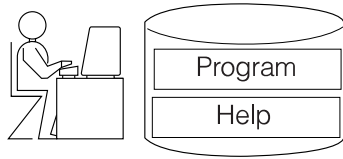
- This results in a prototype that gives a first impression of how users will work with the new application.



- The application developer specifies the names of the libraries that are to contain the programs and data of the new application.

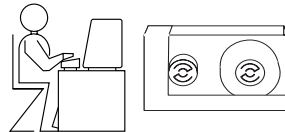


- To provide an interface between APD/400 and the application, the application developer writes an application interface program (AIP).
- Sample AIPs that can be used as a basis and modified according to your company's needs are provided.
- The AIP does the following:
Whenever a user selects a task that calls an application program, APD/400 calls the AIP, which sets the environment specific for the application, calls the application program, and resets the environment.

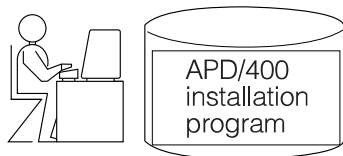


In the next step, the application programmer does the following:

- Writes the programs for the new application
- Creates the help texts to be displayed. Helps can be contained in a folder, display files, or panel groups. Additionally, a user exit for helps is available.



- Now, the programs and help files can be stored on an installation tape.



- The application developer uses APD/400 functions to interactively install the new application.

When integrating existing applications into APD/400, you must perform the steps listed here, except for designing the menu tree and defining program names since they already exist.

Requirements

APD/400 is installed from a tape or a tape cartridge using the procedure provided. The following tables show the machine and software requirements for installing and running APD/400.

Machine requirements	
Application System/400	All models
Main storage	12MB ¹
Disk storage	40MB
Tape drive or cartridge unit	All types supported
Printer	132 characters
Display unit	80 characters, 24 lines

Software requirements	Program number
IBM Operating System/400 Version 3 Release 6	5716-SS1

¹ 1MB (megabyte) equals 1 048 576 bytes.

Your comments, please ...

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