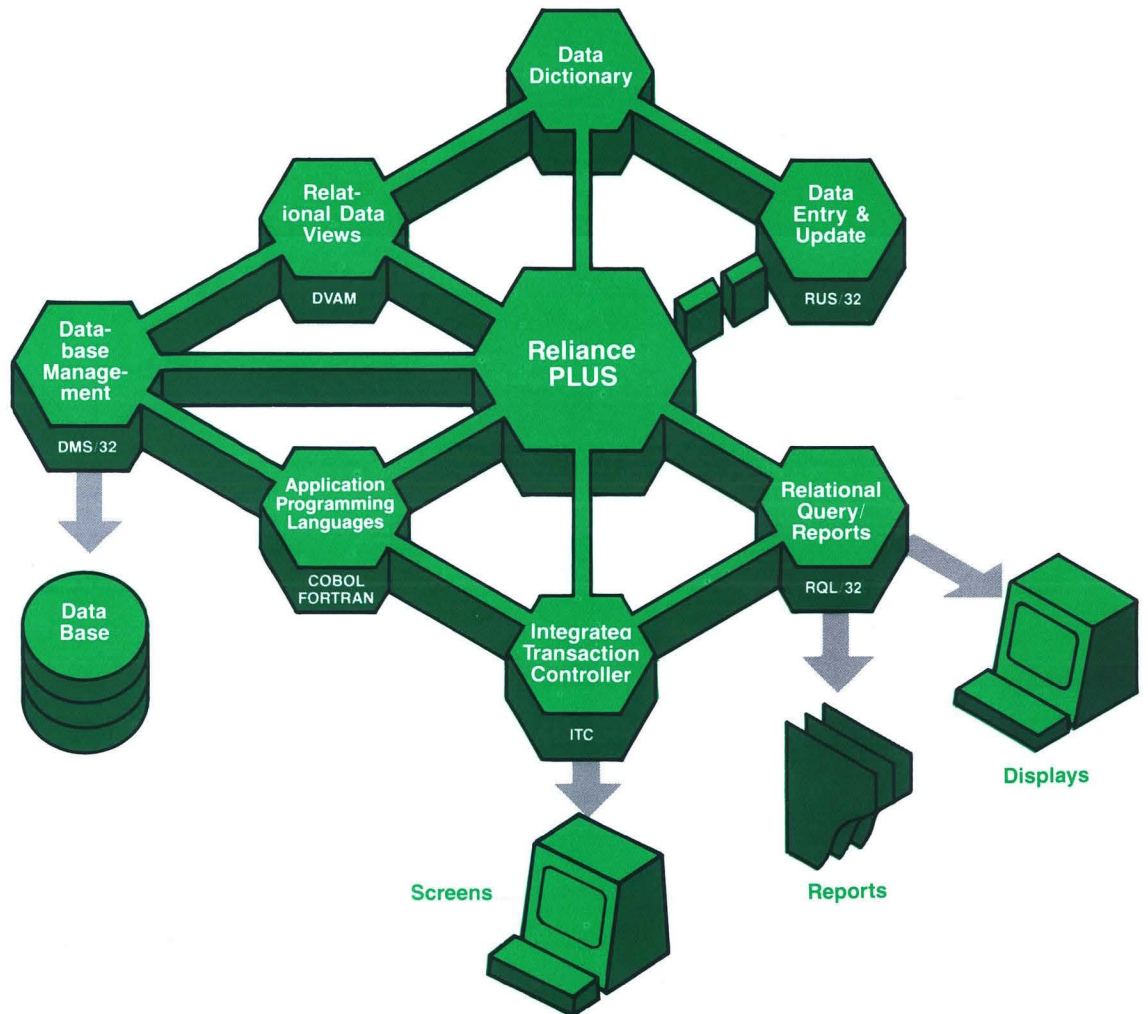


# Reliance PLUS

A Transaction Processing and Database Management

Complete  
On-Line  
System



## Product Overview

Reliance PLUS is Perkin-Elmer's software package for implementation and execution of high-performance on-line database management applications.

Operating on Perkin-Elmer Series 3200 MEGAMINI® minicomputer systems, Reliance PLUS provides:

- Simple-to-use facilities for the design, implementation, and operation of on-line transaction processing applications
- Efficient database management and query/report processing, both providing a relational view of data

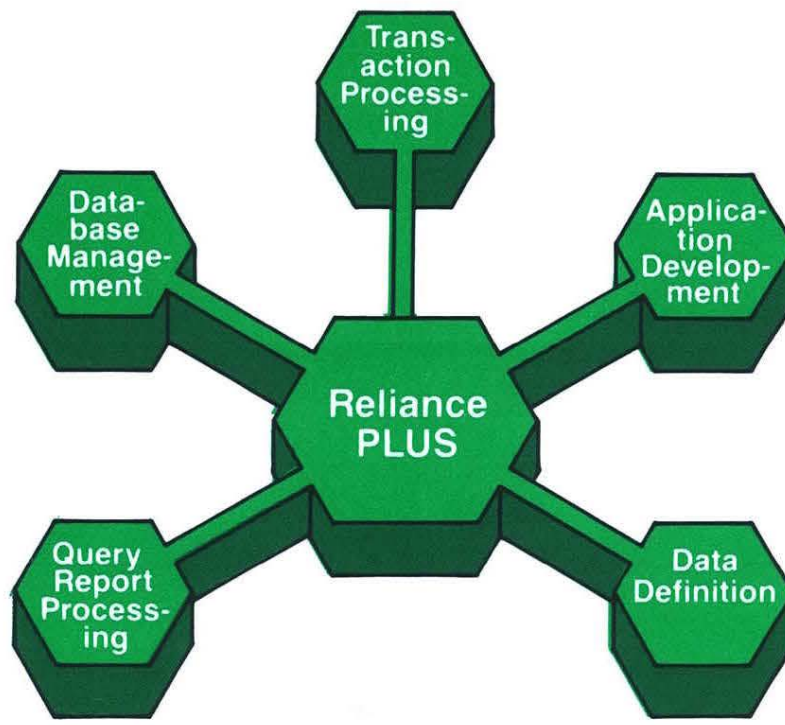
Reliance PLUS is an integrated set of components which support the following:

- Transaction Processing
- Database Management
- Data Definition
- Query/Report Processing
- Application Development

Reliance PLUS is suited to many different types of applications, ranging from manufacturing and personnel management, to financial services.



## Reliance PLUS Features



### Transaction Processing

- Menu driven
- Forms-oriented interface
- Terminal communications
- Multi-level security
- Integrated recovery procedures

### Database Management

- Relational views
- Optional program independence
- Consistent response
- Continuous database reorganization
- On-line recovery procedures

### Query/Report Processing

- Non-procedural interface
- Relational operations
- Report generation
- Saved queries and report specifications

### Application Development

- Screen design
- Data definition
- Security provisions
- Application programming
- Test facilities
- Environment generation

### Data Definition

- On-line data dictionary
- Transaction-oriented interface
- Centralized data definition
- On-line database maintenance
- Data documentation

## Product Description

Reliance PLUS provides comprehensive facilities for the development, execution, and maintenance of on-line database management applications.

Reliance PLUS manages the real-time aspects of transaction processing, so that communications interfaces are transparent to application development. Reliance PLUS provides simple generation, initiation, and control of the application transaction processing system. Reliance PLUS database management affords both the application programmer and the query user a relational view of data, at the same time ensuring rapid response, regardless of the mode of file usage or the volatility of the database over time. Reliance PLUS manages concurrent access and update of the application database, while providing an extremely high level of data integrity.

Application programs may be written in ANSI '74 COBOL or ANSI '77 FORTRAN.

Application development and maintenance are especially easy using the Reliance PLUS Data Dictionary. Queries and reports may be produced as needed, with no programming required, using the Relational Query Language, RQL/32.

With the addition of the optional Reliance Update System RUS/32, it is also possible for the query user to add, delete or update records in the database. Simple applications may be handled entirely using RUS/32 and RQL/32, without the need for any application programs.

Reliance PLUS is well suited to on-line transaction-oriented database applications involving the retrieval and update of data in many files by many users. Ease of development and consistent high performance make Reliance PLUS the best choice for a wide variety of business and scientific applications.

## Transaction Processing Management

Reliance PLUS supports the special requirements of transaction processing systems by providing the functions which are common to all applications and are implemented most efficiently as system software.

### Termination Communications

Reliance PLUS supports up to 128 local or remote Perkin-Elmer editing terminals within each application environment. Leased or switched lines in point-to-point or multi-drop configurations can be supported. Communication with the terminals is handled automatically. A printer can be logically associated with one or more terminals. A transparent interface is provided to allow an application program to send output to the associated printer.

Using Perkin-Elmer's communications software package, PENnet, terminals connected to one Perkin-Elmer system can communicate with remote Perkin-Elmer systems in a network as if the terminals were connected to the remote system. No new commands are needed. The network printing facility allows application programs running under Reliance PLUS to output data to printers that are physically connected to other Perkin-Elmer systems in the network. Perkin-Elmer networking is based on the CCITT X.25 standard for computer-to-computer communication through packet switching networks. In addition Reliance PLUS programs can access remote IBM databases using the interactive 3270 bisynch protocol.



### Forms-Oriented Interface

Users communicate with an application and Reliance PLUS system facilities through screen forms. A screen form usually consists of several phrases, each prompting the user to enter information. Each phrase is generally followed by a blank field, in which the user enters the appropriate response. This "fill-in-the-blanks" format which is employed by the system transaction supplied with Reliance PLUS, provides an excellent prototype for user developed applications.

A "HELP" screen, which contains information to assist the user in completing the screen form may be provided with each screen form. HELP screens are supplied with all Reliance PLUS supplied screen forms, and may be easily created for application screen forms.

The screen forms available for use are presented to the user in a menu. An application may have one or more menus, where menus may be nested as required by the application. Additionally, different menus can be displayed for various sets of users depending upon security requirements.

### Data Validation

Each field in an application screen form may have associated validation attributes, which specify the type of data which can be entered, the range of values or specific values which can be entered, and whether or not data must be entered. Validation attributes are specified during the screen development process.

When the application is operational, Reliance PLUS verifies user-entered data against the supplied validation attributes. If any data

does not meet the stated criteria an error indication is displayed to the user, and the associated application program is not loaded.

### Multi-level Security System

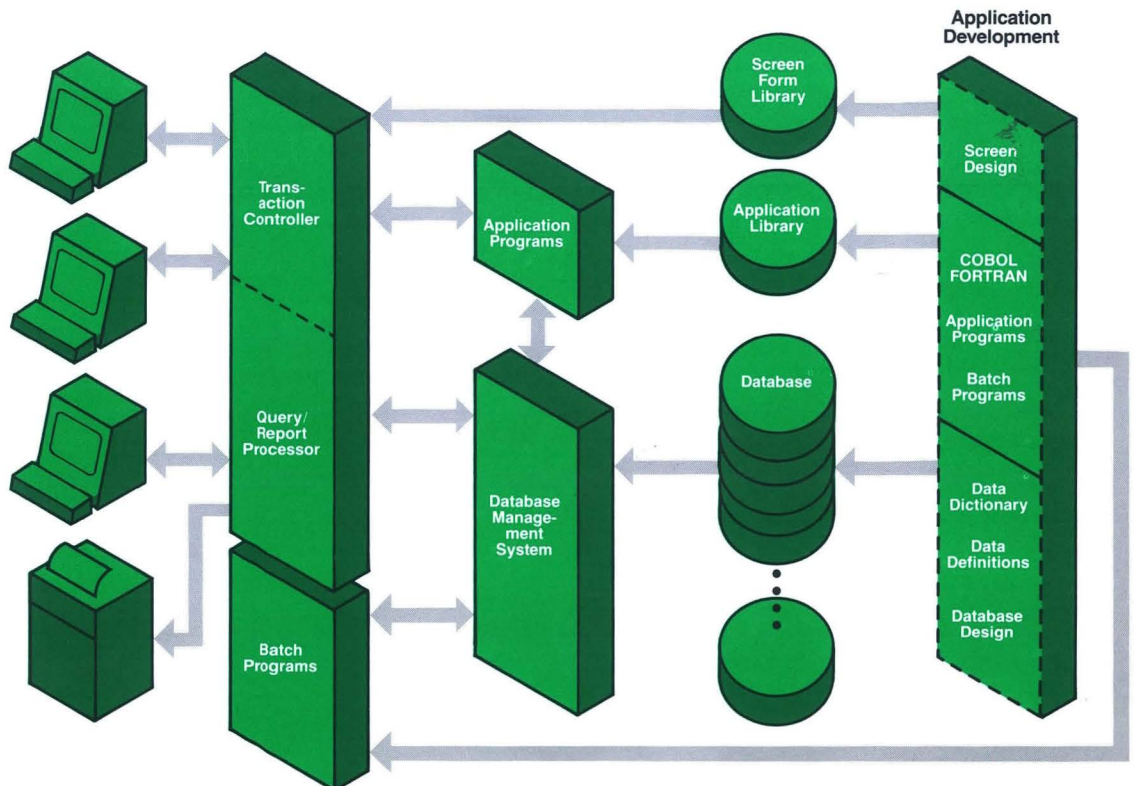
Access to the system is restricted to users who have been allocated a unique user identifier and a password, both of which must be supplied each time a user wishes to use the system. Access to specific areas of an application within a system can be restricted to designated users, where the user is limited to specified transaction types.

Further restrictions can be placed on the transactions available at specific terminals by associating user passwords with individual terminals of the environment with respect to their physical location. Such restrictions are particularly useful in environments containing terminals that are not located in secure areas.

Reliance PLUS also monitors all unsuccessful attempts to sign on to a terminal, where the system controller is alerted if consecutive unsuccessful attempts to sign on are made, and the terminal is removed from the environment.

### Background Transactions

Consistent system performance can be maintained by relegating lengthy processing activities to background transactions. Interactive transactions always have priority over background transactions, and the number of background transactions that can be executing at any given time can be limited by the system controller. For increased flexibility, background transactions can be initiated at a specified time of day and date.





### Multiple Environments

More than one application environment can be defined, operating simultaneously in the same processor. This allows, for example, a production environment and one or more development environments, or several production environments, to operate concurrently.

Batch programs written in COBOL, FORTRAN VII, Perkin-Elmer Common Assembly Language (CAL), and RPG II, executing in the Multi-Terminal Monitor (MTM) environment, can access the application database at the same time as the on-line transactions, with the same integrity provisions enforced.

### Database Management

The Reliance PLUS Database Management System provides a relational view of data for both on-line application programs and query users. Data is represented to the user in a tabular format, which is readily understood, thereby eliminating the need to understand the underlying data storage structure. The user only has to know WHAT data is wanted, not HOW to get it. Through the relational approach, security of data is maintained, and system enhancement is rapidly performed.

All data definition is controlled through the Data Dictionary, which provides maximum ease of use and optimum control of data. The Data Dictionary, which is a repository of all data information in a centralized location, greatly simplifies the development, maintenance, and enhancement activities associated with an application.

Data manipulation is performed using COBOL and FORTRAN subprogram calls, or COBOL Indexed I/O statements in the application programs.

Queries and reports are quickly produced using the non-procedural Relational Query Language (RQL/32).

**The Reliance PLUS Database Management System supports comprehensive facilities for:**

- Database Access
- Concurrency Control
- Integrity Control
- Program Independence
- Database Design
- Access Security
- Database Maintenance/Recovery
- Data Definition (Data Dictionary)
- Query/Report Processing

#### Database Access

Reliance PLUS is designed to meet the need for consistent high performance in an on-line database environment. The system provides an indexed file organization, where records are referenced by multiple keys including:

- One primary key, which is unique for each record
- Unlimited secondary keys, which may be non-unique, and which provide alternate paths to the same data.

Users may retrieve records sequentially, randomly, or dynamically (random access followed by sequential). Sequential access may be in ascending or descending order, depending on user needs. Records may be

randomly accessed by specifying a full or partial key value for any of the keys. An approximate value may also be specified, resulting in retrieval of the record with the next highest key value if a match is not found. A generic key may also be specified, where the leftmost portion of the key is specified.

Records are accessed from each file as fixed length records of one type only, with a primary index and optionally one or more secondary indexes. The format of the records of each file is held in the Data Dictionary.

#### Concurrency Control

Reliance PLUS database management handles the problems of managing user contention for the same data, controlling user access to the database, recognizing deadlock situations, and ensuring the consistency and integrity of data. Any number of users can access the database at any time. Each user or application program can lock either individual records or entire files to prevent access by other users.

Programs are written as if they were to be run singly for one terminal at a time. Updates are performed using Reliance PLUS transaction units (see below). Use of transaction units guarantees the consistency of the database during concurrent access by multiple users.

#### Integrity Control

Reliance PLUS ensures the integrity of the shared database through the transaction unit concept. A transaction unit is a group of updates, all of which must be properly completed to ensure database consistency. Reliance PLUS commands allow the application program to specify whether prior updates in the transaction unit should be accepted or rejected. Reliance PLUS automatically locks the records within a transaction unit and unlocks them following a transaction unit's completion.

If a program fails for any reason, the affected part of the database is automatically rolled back to the last point of consistency, which is the start of the transaction unit. In the event of a system failure, where all the updates in a transaction unit are not completed, then Reliance PLUS automatically rolls back all incomplete transactions to ensure database integrity. The system notifies each terminal operator that the previous transaction was unsuccessful and supplies sufficient information to enable the action to be repeated, or a different action to be taken.



### Program Independence

Reliance PLUS dataviews present a view of the database which is independent of the physical structure of the database. The use of dataviews in the development of an application allows the database definitions and the programs which use them to be altered independently of each other.

A dataview is a logical view of data actually held in the records of one or more (up to four) files in the database. A dataview may contain a subset of the fields in a file or files. A dataview may also contain virtual fields that are derived by performing arithmetic operations on one or more existing fields.

Using dataviews, the database may be accessed by either COBOL and FORTRAN programs or RQL/32 query or report specifications, where dataviews are defined, modified, or deleted using the Data Dictionary. The use of dataviews eliminates the task of recompiling application programs whenever the database is altered.

The use of the dataview facility is optional within an application environment.

### Database Design

An application database may be contained in one or more "placement areas" on one or more discs, where placement areas correspond to OS/32 contiguous files. A database has a single primary placement area which contains all control information, and can also contain user data files. In addition to the primary placement area, a database can have one or more secondary placement areas.

Secondary placement areas, which are allocated to a database as required, are used to increase the space available in a database, and to distribute the database over more than one disc volume. Secondary placement areas and files and their extensions can be created at any time, while the database is operational.

Within a database, the data is divided into named files. A named file can reside in one or more contiguous areas of the database. These areas, which are called extensions, can be distributed within one placement area or over two or more placement areas. File

extensions can be allocated automatically, within specified placement areas as they are required.

As an option, data can be stored in compacted form to reduce physical disc space requirements.

### Access Security

The database can only be accessed through application programs or RQL/32, using only a Reliance terminal where access depends upon predefined user privileges.

Access is further restricted by associating passwords with dataviews. Various dataviews, each containing a subset of fields from one or more files, can be defined according to particular user privileges. By using dataviews to define different sets of fields, access to particular fields of data in a file or files can be restricted to certain users, while permitting access to other fields in the same file or files to other users.

### Database Maintenance/Recovery

Recovery of a database after system failure is performed without operator intervention. Reliance PLUS reestablishes the consistency of the database by rolling back incomplete transaction unit update sequences.

To safeguard against the loss of a database as a result of media failure, Reliance PLUS optionally copies the contents of updated records to a disc log file. The log file, which is held on a separate disc volume from the associated database, contains only the latest copy of all records updated successfully since the last security copy of the database. This log file is used in conjunction with a security copy of the database to rebuild a damaged database. In the event that a database becomes damaged, recovery is quickly performed by rolling forward from a security copy of the database plus the disc log.

Files are always well organized, keeping user response consistently at its peak. Since all free space within a database is distributed, records can be updated or inserted without the use of overflow areas or building chain pointers to inserted records. Space from deleted records is immediately available for reuse. Automatic continuous database reorganization eliminates periodic off-line reorganizations.

### Data Dictionary

The Reliance PLUS Data Dictionary provides the Data Description Language (DDL), which allows the user to define and control the use of data throughout the application environment. The Data Dictionary is the single source for all data definitions in the application, providing the user with a consistent data definition between the different components of the system. This means greater systems analyst and programmer productivity, thus decreased maintenance and enhancement costs.

The user interface to the Data Dictionary is transaction-oriented. The user uses the same

fill-in-the-blanks screen forms that other Reliance PLUS users employ. This approach is very easy to master, while at the same time provides all the power and flexibility needed to develop, maintain, and enhance the most complex applications.

A basic set of query and report specifications is supplied with the dictionary. A user can readily tailor these Reliance PLUS supplied specifications to meet specific needs, or specify new queries and reports, using the Relational Query Language (RQL/32).



### Centralized Data Definition

All data, including file definitions, file types, items, records, and dataviews, are defined using the Data Dictionary. Once data is defined, COBOL application programs need only specify a Data Dictionary copy statement to cause ENVIRONMENT and DATA DIVISION entries for file, record, and index descriptions to be automatically generated from the dictionary. Because all data definition is centralized, the chance for error is minimized, and modifications are easily performed. Enhancement to an application is especially efficient because data definitions only need to be specified through the Data Dictionary, and not in individually affected programs.

### Database Maintenance

Database management operations such as creating new files or deleting files that are no longer required, are performed using Data Dictionary transactions while the database is operational. Files which become full can be automatically extended within user-defined limits.

Reports generated for dictionary data, provide ready documentation for an

application system and facilitate rapid enhancement. 'Where used' queries can be used to identify the use of specific data throughout the system. All definitions catalogued with a specific keyword can be quickly obtained.

### Application Design

Using the Data Dictionary, data structures are easily defined for the storage and access of application data. Application development is simplified through the use of dataviews, where each program can have a view of the data that is pertinent to the program's purpose.

Dataviews can be based on multiple files or a single file. Dataviews can be defined as needed, without affecting non-related programs. Since dataviews can be built by specifying fields which are derived by performing arithmetic operations on existing fields, redundancy within the database can be minimized. Access to views is controlled by passwords, thus field level security is easily achieved.

## Query/Report Processor

The Relational Query Language (RQL/32) is the query and report writing component of the Reliance PLUS system. RQL/32 accesses the same database as applications written in COBOL or FORTRAN, readily performing many functions that ordinarily would be performed by custom-written application programs. Statistical information such as totals, sub-totals, averages, and results of arithmetic operations performed on numeric fields, may be displayed. For complete flexibility, query responses can be displayed at the user's terminal and queries can be saved for subsequent use, with or without modification. Report specifications are easily set up, and also can be saved and subsequently modified.

RQL/32 is an easy-to-use facility which allows authorized personnel interactively to retrieve data or print reports on an as-needed basis. Since RQL/32 is non-procedural, no programming knowledge is required. Staff members of all departments can quickly satisfy their retrieval requirements by simply stating WHAT data is needed, not HOW the system is to retrieve the data. RQL/32 specifications are entered via 'fill-in-the-blanks' screen forms with automatic prompting and user help and information facilities to guide the user in making the request.

### Interactive Query Displays

When making a query the user specifies selection criteria, and optionally modifies default titles, orders columns for display, and requests statistical information. Or, the user may simply specify execution of a saved

query. RQL/32 then searches the designated file or files in a performance-optimized manner and presents the first formatted screen of responses to the user. If multiple screens of data are required to present all of the response, RQL/32 prompts the operator to continue browsing. When RQL/32 has displayed all selected records, it presents statistics if requested, and a count of retrieved records. At this point, the query may be modified and rerun, or saved.

### Saving Queries and Report Specifications

Interactive queries and report specifications can be saved for later use by the same or a different authorized user. At any time, queries can be repeated and reports can be generated without having to reenter all the details at the terminal. All of the parameters of the saved query and report specification can be easily and dynamically modified before use, either permanently or temporarily. This facility can be used for the routine production of reports from stored query definitions, where reports can be issued periodically as data is updated.

### Report Generation

Printed reports can be obtained for selected information, thereby eliminating the need for numerous application programs dedicated to report writing. The report facility allows output to be sorted on one or more columns, subtotals to be produced when the contents of one or more columns change, page throws to be triggered when the contents of one or more columns change, three-part report headings and footings to be specified, and printer page size to be accommodated. The



Query/Report Processor (Continued)

current time, date, user and page number can be automatically inserted in headings when the report is printed. Fields can be ordered for report purposes so that a particular field can appear in any column of the report regardless of the field's position in the record. Reports are produced as background transactions, thus allowing the user to proceed immediately with other transactions. Reports are printed on the terminal's associated printer.

A sample report is shown using the RQL/32 features: sorting, column positioning, page throws and subtotals triggered when the contents of a column change, user specified column headings, headings and footings with current date and page number inserted. The percentage increase column values are obtained by arithmetic operations on specified fields, as specified in the dataview.

REVIEW DETAILS FOR WAGES AND ACCOUNTS					
DEPARTMENT	EMPLOYEE	AGE	SALARY	PERCENTAGE INCREASE	
ACCNTS	BRADMAN, DONALD GEORGE	44	14000	09.37	
	HILL, CHRISTINE BEVERLY	37	16000	08.10	
	HOBBS, JOHN BERRY	47	14000	09.37	
	JAMES, WILLIAM MARTIN	31	16000	08.10	
			60000		

REVIEW DETAILS FOR WAGES AND ACCOUNTS					
DEPARTMENT	EMPLOYEE	AGE	SALARY	PERCENTAGE INCREASE	
WAGES	HALL, WESLEY WINFIELD	40	14000	09.37	
	PAYNE, JOANNA MARY	37	14000	09.37	
			28000		
			88000		

REVIEW DETAILS FOR WAGES AND ACCOUNTS					
SALARY					
MINIMUM	14000				
AVERAGE	14667				
MAXIMUM	16000				
TOTAL	88000				
NUMBER OF RECORDS SELECTED: 6					
PRODUCED ON 07/01/83 PAGE 3					

Reliance PLUS Performance

Reliance PLUS design concepts ensure consistently high performance of a user's application. Response time is kept as low as possible because transactions are processed as soon as they are entered. Data validation is first performed by Reliance PLUS according to criteria specified during screen form design, before the application program is loaded. Only if the data entered is valid, is the application program then loaded. Any function that requires more computation or more disc accesses than can be executed in a few seconds, or any function that is essentially non-interactive can be performed by a background transaction, thus freeing the terminal for further interactive transactions.

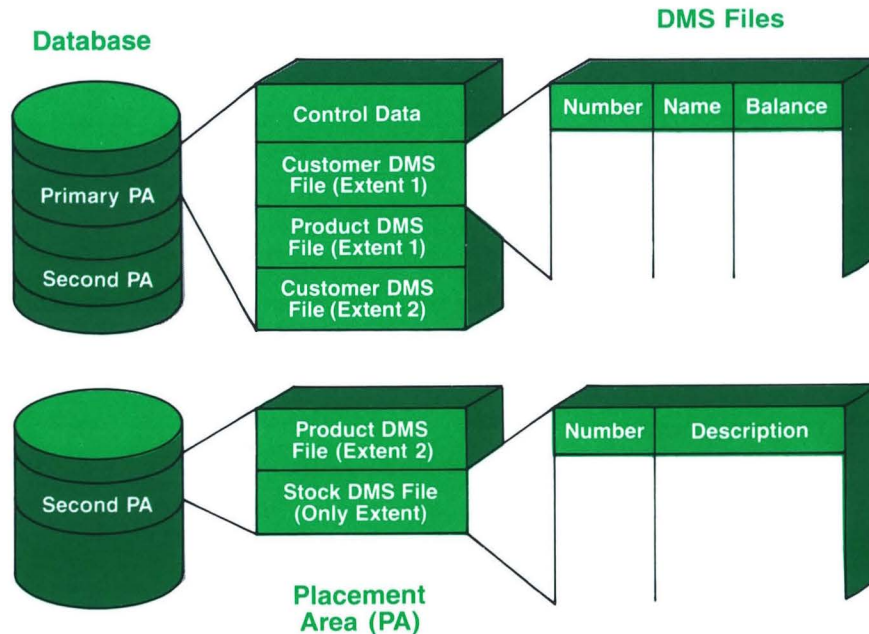
The Reliance PLUS database management system ensures the rapid update and retrieval of data in the database, regardless of the number of users or the method of access. The Reliance PLUS database provides balanced index structures, distributed free

space, and continuous reorganization. Record access speed is not dependent on primary or secondary index keys. The index structures provide consistent response regardless of the path specified for access.

Reliance PLUS maintains a high degree of availability. Database recovery from system failure is automatic and fast. In the event that a database becomes damaged, recovery is quickly performed by rolling forward from a security copy of the database plus the disc log.

Consistent high availability is further supported by automatic, continuous database reorganization. All free space within a database is distributed, so that records can be updated or inserted without the use of overflow areas or building chain pointers to inserted records. Space from deleted records is immediately available for reuse.

Sample Database Structure





There are several aspects to the development of a transaction-oriented database system: screen definition, data definition, application programming, testing. Reliance PLUS simplifies the development of the application system by supplying terminal management, transaction control, security mechanisms, concurrency controls, data dictionary, and data manipulation routines for COBOL and FORTRAN. The application designers need only focus on the application itself, and not be concerned with complicated database definition and control, the complexities of terminal management, concurrency control, database integrity, or recovery techniques. Reliance PLUS manages all these aspects.

Reliance PLUS offers many features designed to relieve the application programmer of the complexities of developing on-line database applications, where several terminals require concurrent communications, message processing, and database access.

#### **Development Facilities Include:**

- Data Definition Language—the Reliance PLUS Data Dictionary and data definition copy facility for COBOL programs
- On-line file creation and extension
- Data Manipulation Language—COBOL Indexed I/O Statements and COBOL and FORTRAN call level interface for complete access and control of the database
- Screen definition—interactive, program independent
- Automatic input data validation
- Associated HELP screens for user defined screens
- On-line screen form testing
- Concurrent program development and production environments
- Secure batch testing facility
- Sample Application—complete Reliance PLUS application illustrating the features of the Reliance PLUS system

#### **Interactive Screen Form Definition**

Reliance PLUS allows early end-user involvement in the development cycle, permitting the application user to design screen forms with little or no assistance from the programming staff. Reliance PLUS merely requires the user to enter the desired screen form or layout, including input prompting or cues, on the screen in the format desired. Screen formatting can be accomplished prior to the actual programming effort, or it can be done concurrently.

Formatting terminal screens is a simple, fast, user-oriented procedure that requires no special knowledge or programming expertise.

#### **Automatic Input Data Validation**

Reliance PLUS provides on-line facilities for validating input data, where input data

elements are assigned validation attributes as part of the interactive screen definition process.

Reliance PLUS then performs validation checks on user-entered data, thus the application program is relieved of many of the details of data validation. If a user enters input data that does not meet the stated criteria, an error indication is returned to the user and the associated application program is not initiated.

#### **On-Line Screen Form Testing**

The user can thoroughly test a new screen form or modify an existing form without executing the associated application software. This allows screens to be tested while the application programming effort is in progress.

The user's screen is displayed exactly as defined. The user then tests the screen form interactively by entering actual or test data. Data that does not conform with the validation criteria is rejected in the same manner as when the screen form is in actual service. The user can quickly correct errors in the data validation criteria without completely recreating the screen.

#### **Data Independence**

Revising or modifying a screen form does not require changes to the associated application program. Since the physical order or location of the data items on the screen is irrelevant to the application software, screen forms and application programs can be developed and altered independently.

#### **Programming Ease**

Application programs are individually coded and independently compiled. Terminals are readily accessed using subroutine calls to Reliance PLUS routines which control the display of screens, and which get data from the screens and output data to the screens.

Database access is based on the Reliance PLUS transaction unit which greatly simplifies programming and eliminates the potential side effects of concurrent database use. The Reliance PLUS commands to end or fail a transaction unit automatically remove all record locks, freeing the programmer from concerns about inadvertently leaving "orphan" locks on records. There is no need to artificially reorder the application flow to allow for update rollback at the transaction level, or to write recovery programs or rollback routines. Program-level or system-level failures are handled by Reliance PLUS automatically.



## Database Update

The optional component Reliance Update System (RUS/32,) provides an easy-to-use method for entering and updating information in a Reliance database with no programming effort involved. The data to be modified is retrieved using the same style of 'fill-in-the-blanks' screen forms already familiar to RQL/32 users.

The update process is carried out under the control of a "profile". This specifies the file to be updated, the records to be accessed, the fields which may be changed, and the permitted operations—any combination of create, modify and delete. Data being entered into the fields may be subjected to range/value checks, ensuring that only valid information is written to the database. The profile definition may easily be modified at any time.

A profile can specify a particular set of records in a file. When using that profile, the

user can further refine the selection criteria, so that only the record or records of interest are retrieved for updating.

The records in any given file are displayed and updated using a screenform which is specially generated by the profile. If the layout of this screenform is not in the exact format required by the user, it easily may be changed using the standard screenform definition facilities of Reliance. Compatible profiles can share the use of a common screenform, or each profile can have its own individual screenform.

A system of passwords is used to ensure that files may be updated by authorized personnel only, and also to control the creation and amendment of profiles. If desired, all uses of a profile to update a file are recorded in a separate log file. Field-level security makes sure that the amount of updating permitted can be tightly controlled.

## Ease of Enhancement And Growth

Reliance PLUS is designed to facilitate system expansion. Small systems can be implemented to run a specific transaction. Large multi-environment systems can be generated for concurrent program development and production usage. High-level language interfaces assure application program compatibility throughout growth.

New applications can be developed and tested without interfering with production systems. Not only can the program development environment be executed at the same time as the production system, but also more than one production environment can run at the same time, giving the user both protection and flexibility while building or enhancing an application.

A single Reliance PLUS system, used with Perkin-Elmer's Multi-Terminal Monitor, can support up to 64 programmers and 128 transaction processing workstations, either

local or remote. Additional Reliance PLUS systems each supporting up to 128 transaction processing workstations can be added for essentially unlimited growth options.

Perkin-Elmer offers two packages to suit customer needs: Reliance PLUS, which includes the Reliance PLUS database management system, the transaction controller, the data dictionary, the query/report processor, application development aids, and Reliance, which includes a data management system that provides the user with direct access to the database using COBOL Indexed I/O statements or FORTRAN subroutine calls, the transaction controller, the data dictionary, the query/report processor, and application development aids. Customers with larger applications, which are likely to grow over time, will benefit using Reliance PLUS.

## System Requirements

### Minimum Hardware Requirement

Any Perkin-Elmer 32-bit system with a minimum of 1MB memory, 80MB disc, and Perkin-Elmer editing VDUs.

### Minimum Software Requirement

OS/32 Revision 6.1 or higher

### Product Numbers

#### Reliance PLUS:

S71-054 Group I system  
S72-054 Group II system  
S73-054 Group III system

#### Reliance:

S71-035 Group I system  
S72-035 Group II system  
S73-035 Group III system

#### Reliance PLUS DBMS Option (Prerequisite—Reliance):

S71-055 Group I system  
S72-055 Group II system  
S73-055 Group III system

### Related Documentation

29-718 Reliance—Overview  
48-051 ITC Screen Form Development Manual

48-035 Data Dictionary Reference Manual  
48-036 Reliance Systems Administration Manual  
48-054 RQL/32 User Guide  
29-713 Reliance Sample Application  
29-712 ITC Systems Programming and Operations Manual  
29-717 DMS/32 Systems Programming and Operations Manual  
48-065 Environment Control Monitor  
29-722 Reliance Operator's Reference Summary  
29-711 ITC COBOL Programmer's Reference Manual  
29-715 Data Management with COBOL Programmer's Reference Manual  
48-044 ITC FORTRAN Programmer's Reference Manual  
48-045 Data Management with FORTRAN Programmer's Reference Manual  
48-100 Reliance Design Guide  
48-109 Reliance Resource Monitor System Programming and Operations Manual  
48-113 Reliance Demonstration Manual  
48-108 RUS/32 User Guide



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**Associated  
Perkin-Elmer  
Software**

**Multi-Terminal Monitor (MTM)**

The OS/32 Multi-Terminal Monitor (MTM) provides interactive and batch support for program development. MTM permits up to 64 interactive terminal users to share system resources to edit, compile, and establish application programs.

**COBOL**

Perkin-Elmer COBOL conforms to the ANSI '74 standard and is certified by the Federal Compiler Testing Center. COBOL is a high-level language suited for both transaction processing and batch programs. Access to application data files is through ANSI '74 standard COBOL Indexed I/O statements.

**FORTRAN VII**

Perkin-Elmer FORTRAN VII conforms to the ANSI '77 standard and is certified by the Federal Compiler Testing Center. FORTRAN is a high-level language suited for both transaction processing and batch programs. Both Perkin-Elmer FORTRAN VII D (Development) and FORTRAN VII O (Optimizing) compilers may be used with Reliance and Reliance PLUS.

**RPG II**

Perkin-Elmer RPG II is a powerful and easy-to-use report generator. RPG II batch application programs can share access to an application database along with other application programs in the user's on-line system.

**SORT/MERGE II**

Perkin-Elmer SORT/MERGE II package provides an efficient means of sorting and merging records from a variety of input devices or files. SORT/MERGE II can be used with files created by batch programs which process application database files.

**RUS/32**

The Reliance Update System (RUS/32) allows individual records within a Reliance database to be created, modified or deleted without the need to write special purpose application programs. RUS/32 runs as an integral part of Reliance and can therefore make use of all the features and advantages of the Reliance system.

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**Manufacturing facilities  
and Sales/Service  
offices located  
throughout the world;  
domestic sales offices  
located in**

ALABAMA: Huntsville; ARIZONA: Phoenix; CALIFORNIA: Los Angeles, Sacramento, San Diego, Santa Clara, Tustin; COLORADO: Denver; CONNECTICUT: Fairfield, Hartford; FLORIDA: Orlando; GEORGIA: Atlanta; ILLINOIS: Chicago, Springfield; KANSAS: Kansas City; MARYLAND: Rockville; MASSACHUSETTS: Boston; MICHIGAN: Detroit; MISSOURI: St. Louis; NEW JERSEY: Cherry Hill, West Long Branch; NEW MEXICO: Albuquerque; NEW YORK: Binghamton, Lake Success, New York City, Rochester; OHIO: Cleveland, Dayton; OKLAHOMA: Oklahoma City, Tulsa; PENNSYLVANIA: Pittsburgh; TEXAS: Dallas, Houston; VIRGINIA: Richmond; WASHINGTON: Seattle;

Major subsidiaries located in AUSTRALIA: Adelaide, Albury, Brisbane, Canberra, Melbourne, Perth, Sydney; and NEW ZEALAND: Wellington; BELGIUM: Brussels; CANADA: Calgary, Montreal, Ottawa, Toronto, Vancouver; ENGLAND: Manchester, Slough; FRANCE: Arcueil, Bordeaux, Grenoble, Lille, Lyon, Perigueux, Toulouse; GREECE: Athens; ITALY: Milan; WEST GERMANY: Dusseldorf, Frankfurt, Munich, and AUSTRIA: Vienna; NETHERLANDS: Gouda; SINGAPORE; HONG KONG; JAPAN: Tokyo. Other countries are served by a network of distributors.

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**The information  
contained herein is  
intended to be a  
general description  
and is subject to  
change with product  
enhancement.**

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