Software Product Description

PRODUCT NAME: APTuser™, Version 2.3 **SPD 27.W6.01**

DESCRIPTION

APTuser is a report development and production system for the OpenVMS* Operating System. It provides a uniform access method for data stored by RMS, Rdb/VMS, ORACLE®, ADABAS™, and INGRES™. A programmer or non-programmer, novice or professional can use APTuser to retrieve data without considering the underlying storage method or physical location. APTuser is intended for general purpose, multi-user applications which are centralized or distributed. In addition to handling data retrieval, APTuser provides an operating environment that makes it suitable for inclusion in an existing production environment.

APTuser presents information as a report. Information can be printed on a hard-copy device, sent directly to the user's terminal for browsing, or stored on disk for later printing or future use by other programs such as spreadsheets or graphic generators.

APTuser is used interactively to define a report. Report definition is done with the menu-driven user-interface. The interface features action bars, pull-down and pop-up menus, selection pointers, fill-in-the-blank data entry fields, and extensive on-line help facilities.

APTuser stores definitions of reports, views, menus, user privileges, and environment parameters in an internal data dictionary.

Data Dictionaries

APTuser is dictionary driven. Currently, it supports the following data dictionaries:

- ADD (APTuser Data Dictionary), when accessing RMS databases
- CDD/Plus or CDD/Repository (Digital's Common Data Dictionary), when accessing RMS databases
- Rdb/VMS internal data dictionary, when accessing Rdb databases
- ORACLE internal data dictionary, when accessing ORACLE databases
- PREDICT™ data dictionary, when accessing ADABAS databases
- INGRES internal data dictionary, when accessing INGRES databases

Data Definition

APTuser retrieves data according to a view. The view is a simple way for the user to access complex hierarchical data structures. The view is defined apart from the report and can be used by many different reports and users. The view is the minimal definition required to produce a default report.

A view combines data from several files and/or database relations simultaneously. The files or relations that make up the view must have been previously defined in one of the supported data dictionaries. The user-interface includes a graphic view browser, which displays the view's schema on the screen.

APTuser supports the following data types:

- Signed byte integer
- Signed word integer
- Signed longword integer
- Signed quadword integer
- Single floating point (F-Float)
- Double floating point (D-Float)
- Double floating point (G-Float)
- Packed decimal
- Character strings
- Unsigned and signed numeric strings
- APTuser date format (a four character string)
- OpenVMS date format

APTuser supports the following retrieval (join) schemes:

- One to one

* The terms OpenVMS and VMS refer to the OpenVMS Operating System.

- One to many
- One to many (parallel streams)
- Outer joins available for the above

Join fields acceptable to APTuser:

- RMS index fields can be used to join APTuser view records. Top level in view hierarchy need not be an index files. All files joined must be of index organization. Segmented and partial keys are supported.
- Relational databases any field can be used to join any other relation. Multi-database views are supported.

Distributed Databases

APTuser provides a distributed database support for Rdb, INGRES, and RMS databases/files. This support allows several databases/files of the same structure (the same metadata) to be covered in one report. APTuser can access remote files or databases over DECnet.

Computed Fields

The view definition can include fields which are computed at run-time and are based on the values of other fields in the view. These computed fields are virtual fields which are not stored physically in the database. Once computed fields have been defined in the view, APTuser regards them as if they were defined in the database. They can be used as sort keys, select fields, break fields, and as operands in the definition of other computed fields. APTuser allows computed fields to be used as connection (join) fields.

APTuser takes algebraic expressions as the definition of computed fields, and recognizes all standard operators. In addition APTuser provides a rich run-time library of functions that can be used in these expressions. User functions written in any OpenVMS standard 3GL language can be easily added to the APTuser run-time library.

Data Selection

Any field of the view can be a data selection field. Selection fields let the user limit the range of data presented in the report. The range of values for these fields can either be entered by the report's operator at run-time, or can be entered as fixed values during view definition.

The ranges are validated against their original definition in the data dictionary. The user can specify a from-to type range or a list of such ranges. Various combinations of standard relational operators are supported. Wildcards, using the OpenVMS convention, are supported.

Sort

APTuser allows the user to set any field of the view as a sort key. APTuser supports ascending and descending sort types. APTuser optimizes the sort process according to existing access keys and select fields.

Report Breaks

APTuser allows the user to set any field of the view as a report break. A break means that the flow of retrieval is interrupted each time the value of the break field changes. APTuser supports the display of data both at the beginning of each break and at the end. Special layout computed fields can be defined to further manipulate values calculated as part of report breaks.

APTuser supplies the following statistical functions to handle data at the end of breaks:

- Total and subtotal
- Maximum and minimum
- Count
- Average
- Standard deviation

Final and running values of these statistical functions can be displayed on the layout or used in layout computed fields. Final value of a statistical function which is evaluated at an end-break event may be displayed at a begin-break event if early evaluation is requested (double-pass on data is implied).

Report Layout

The view definition is sufficient for APTuser to generate a full report layout description. Using the interface, the user can modify the layout. A full-screen layout editor enables ''painting'' of the report ensuring that what the user sees is what the user gets.

The layout editor supports the following actions:

- Repositioning any layout entity
- Reshaping regions
- Adding text and frames to be displayed
- Modifying the field prompts
- Removing any field from the display
- Changing the security code of fields
- Changing the editing format of fields. Supported formats are:
  - — Alpha, "as is"
  - — Alpha, right to left
  - — Unsigned decimal, right aligned, leading zeroes or spaces

  - — Signed decimal, radix point, digit separator, and currency
  - — Conversion to upper and lower case
  - — Alpha-numeric, position dependent
  - — Delimiters to create alpha sub-fields
  - — User-controlled date formats

Output Formats

In addition to the standard formatted output, APTuser can produce its output in the following formats:

- ASCII format with various qualifiers
- WK1 format (123 spreadsheet file)
- DIF format
- Binary format
- Data-object format suitable as input for multi-phase APTuser reports

Application Integration Services

A comprehensive set of application integration functions are provided. Services include:

- Activation of the user interface or parts of it.
- A set of functions for implementing an alternative report execution screen.
- A run-time library extension by which 3GL functions can be called from APTuser reports.
- Exit points for table/field level security control.

Menu Services

A full menu facility for managing the produced reports is included. This feature is available to all users. The interface provides the means of connecting reports, DCL procedures, and existing executable images to the menu.

Either product can be called easily from any compiled OpenVMS executable image. Once inside the user-interface, all available views and reports are displayed and easily accessible to operators.

A number of external activation modes are offered:

- Running directly from DCL (with parameter passing)
- Using supplied menu system that allows:
  - — Direct execution of a pre-defined report
  - — Callup of the user interface
  - — Callup of interface with chosen definition pre-loaded
- Calling either product from an executable image using the API (APTuser Programming Interface).

Security

APTuser supports field level access control. The security code is defined at the full-screen layout painter. The access code is based on the OpenVMS username of the report operator. The security facility allows the user to limit the display of data according to the identity of the report requester.

Various levels of user capabilities are offered. These are inclusive, i.e., the user can have all or partial privileges. The controlled capabilities are:

- Super user access to security definitions.
- User interface access to either Action bar, depending on the product license.
- Spooler access to the Spooler utility.
- DCL access to a spawned DCL process.
- Saving definitions capability to save modified report and view definitions.
- Access to View Definition capability to add or modify view definitions.
- Services access to maintenance services.
- Security rating capability to modify security rating.

In addition to its own controls, both products recognize existing OpenVMS and database protection.

Spooler Management

APTuser is connected to a spooler facility which manages print operations and acts as an intelligent front end to the OpenVMS print services. This facility is available to all users.

The spooler recognizes all reports and manages their output.

The spooler can:

- Control the report's target print queue
- Submit report production and printing to batch queues
- Control various print queue parameters
  - — Print immediately or defer
  - — Number of copies
  - — Time of print
  - — Queue priority
  - — Flag and burst printing
  - — Print from page to page

- Display information from print queues
- Handle reports in print queues
- Display information about reports' output
  - — Report's name (category)
  - — Creator's username
- Time of last printing
- Success/Failure code of last print
- Size of report (pages)
- Re-print or delete reports' output

The user has the option to disregard the spooling feature.

HARDWARE REQUIREMENTS

APTuser can run on any VAX, MicroVAX, VAXstation, or VAXserver configuration supporting the required software versions listed in the *SOFTWARE REQUIREMENTS* section below.

SOFTWARE REQUIREMENTS

- A minimum OpenVMS VAX Operating System V5.2

OPTIONAL SOFTWARE

- Access to Rdb/VMS requires run-time Rdb/VMS V3.0 or higher
- Access to CDD/Plus requires run-time CDD/Plus V4.0 or higher
- Access to CDD/Repository requires run-time CDD/Repository V5.1 or higher
- Access to ORACLE requires run-time ORACLE V5 or higher
- Access to INGRES requires run-time INGRES V6.3 or higher
- Access to ADABAS requires run-time ADABAS V2.1 or higher and PREDICT V3.1 or higher

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

DISTRIBUTION MEDIA

9-track 1600 BPI Magtape, TK50 Streaming Tape.

NLS (National Language Support)

APTuser is available in the following languages:

- English
- French
- Hebrew

ORDERING INFORMATION

Development Option

Traditional Software License: QL-00HA*-AA
1-User Personal Software License: QL-00HAA-2B
1-User Concurrent Software License: QL-00HA*-3B
Software Media and Documentation: QA-00HAA-H*
Software Documentation: QA-00HAA-GZ

Run-Time Option:

Traditional Software License: QL-00JA*-AA
1-User Personal Software License: QL-00JAA-2B
1-User Concurrent Software License: QL-00JAA-3B

* Denotes variant fields. For additional information on available licenses, services, and media, refer to the appropriate price book.

SOFTWARE LICENSING

Full Development Option

The APTuser Full Development Option includes the Report Engine, Report Definition, View Definition, Environment Definition, Spooler, Menu, API Services, and the API libraries.

The Full Development Option is the standard license.

Run-Time Option

A Run-Time Option of APTuser is available.

The purpose of the Run-Time Only version is to support the execution of previously developed reports on a target machine.

The software components contained in each license option is summarized in the following chart.

	Run-Time	Development
Report Engine	X	X
Report Definition		X
View Definition		X
Environment Definition	X	X
Spooler	X	X
Menu	X	X
API Services	X	X
API Library		X

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License Management Facility Support

This layered product supports the OpenVMS License Management Facility.

For more information on the License Management Facility, refer to the OpenVMS VAX Operating System Software Product Description (SPD 25.01.xx) or to the *License Management Facility* manual of the OpenVMS VAX Operating System documentation set.

For more information on Digital's licensing terms and policies, contact your local Digital office.

SOFTWARE PRODUCT SERVICES

A variety of Software Product Services support options are available from Digital.

Service offerings for this product, which include telephone or electronic assistance, will be available during the normal business hours of the local Digital office (typically, Monday through Friday, 8AM-5PM, dependent on country resources), excluding locally observed Digital holidays.

In countries and locations offering premium level Software Product Services support options (i.e., increased responsiveness or extended hours of availability), this product is excluded from those service offerings.

For specific service availability or more information, contact your local Digital office.

SOFTWARE WARRANTY

The Software Warranty for this product is provided by Digital with the purchase of a license for the product, as defined in the Software Warranty Addendum of this SPD.

The above information is valid at time of release. Please contact your local Digital office for the most up-to-date information.