Software Product Description

PRODUCT NAME: DEC DATATRIEVE/Hangul for OpenVMS Version 6.1 *SPD 25.H2.02*

DESCRIPTION

DEC DATATRIEVE/Hangul for OpenVMS, hereinafter referred to as DEC DTR/Hangul or the 'Software Product', is the Korean version of the DEC DATATRIEVE product. DEC DTR/Hangul is a query, report and data management system for the OpenVMS/Hangul Operating System, and is an upward compatible version of DEC DATATRIEVE extended to support Korean. In this Software Product Description, description of product functionalities that support processing of English data in general, together with a list of specific functionalities that have been extended to support processing of Korean data are provided.

The Software Product provides a uniform access method for data stored by RMS and DEC Rdb/Hangul on OpenVMS, and data residing in other databases accessible by the Rdb Access products. Using DEC DTR/Hangul, novice or experienced users can retrieve or modify data without considering the underlying storage method or physical location.

Modes of Operation

DEC DTR/Hangul presents information in several different formats. Information can be displayed using simple defaults or can be reported through a more flexible report writer. Information can be displayed on a terminal or workstation, printed on a hard-copy device, or written to a file. Information can also be displayed with user-defined DEC FMS/Hangul and VAX TDMS forms, as well as with DECforms/Hangul or presented graphically. Graphics output is REGIS; it can be managed by devices or converters accepting REGIS.

DEC DTR/Hangul can be used interactively to retrieve, modify, store or delete data using a simple set of commands. Frequently used combinations of commands can be stored as named procedures and invoked by names. Programs written in other DEC programming languages can call DEC DTR/Hangul, allowing them to be independent of underlying data storage methods and physical location.

Data Dictionary

DEC DTR/Hangul is dictionary driven. Data descriptions are stored in and retrieved from the CDD/Repository for OpenVMS. DEC DTR/Hangul includes commands to store, examine, modify and delete definitions in the CDD/Repository for OpenVMS, and can use definitions stored by other VAX layered products, such as DEC Rdb/Hangul for OpenVMS database definition.

Protection

Protection is handled by the CDD/Repository for OpenVMS. DEC DTR/Hangul can access data only through definitions in the CDD/Repository for OpenVMS. Locking the definition prevents the user from accessing the data. Access control can be based on name, login account, password or terminal class (local, remote, or dial-up).

Remote Data Access

DEC DTR/Hangul provides access to data on remote VAX or PDP-11 systems, provided that DATATRIEVE has been installed on the remote system. DEC DTR/Hangul uses the local data dictionary on the remote node, and divides processing between the host and the remote system to minimize traffic over the communications link.

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For the Nonprogrammer

DEC DTR/Hangul provides a novice user with a tutorial mode, called GUIDE Mode.

DEC DTR/Hangul offers ADT, the Application Design Tool, for more experienced users who want to define their own data structures. ADT takes the users step-by-step through the definition of a domain based on an RMS data file.

If DEC DTR/Hangul is used on the same information by experienced and novice users, the novice user can use the full power of the language by invoking procedures designed by the more experienced user.

For the Programmer

DEC DTR/Hangul is a highly structured language that provides automatic access optimization, data type conversion and data validation. Looping and control structures, such as IF THEN ELSE, BEGIN END, REPEAT, WHILE, CHOICE and FOR (each record), can be combined and nested to create complex, powerful commands.

DEC DTR/Hangul responds to programming errors with clear, explicit error messages. A user can issue an EDIT command to invoke a text editor with the erroneous statement as input text, correct the mistake, and resubmit the command. This editor can be either HEDT, HTPU, EDT, TPU or DEC Language-Sensitive Editor (LSE), and is controlled by a user logical name assignment.

Data Definition

DEC DTR/Hangul stores the fixed attributes of each record in the record definition. In addition to COBOL-like attributes, DTR/Hangul accepts validation criteria, fields whose values are computed at run-time, missing value expressions, and default values.

DEC DTR/Hangul supports most data types used by DEC FORTRAN, DEC COBOL, VAX PL/I, DEC C and VAX BASIC.

DEC DTR/Hangul also supports Varying String and Segmented String data types in DEC Rdb/Hangul for OpenVMS databases.

Views

A VIEW is an alternative description of data. It can restrict a user by including only some of the data items in a record, or it can combine data items from several files. Information can be linked through common values (or set linkages in DEC DBMS) to produce complex hierarchical structures. Using a predefined VIEW, a user can access and display data from several files at once with the same commands used on a single file. Data accessed through a VIEW can be printed and modified, but data cannot be stored or erased using a VIEW.

Program Access

DEC DTR/Hangul can be called from any language that supports the VMS calling standard. DEC DTR/Hangul automatically converts data from its storage format to the format expected by the program. All of the features of interactive DEC DTR/Hangul are available through the call interface and use the same syntax.

Storage Methods

DEC DTR/Hangul uses a single, consistent syntax to provide access to information stored in RMS for OpenVMS sequential or indexed files (RMS relative files are supported for queries only), DEC DBMS and DEC Rdb/Hangul databases. DEC DTR/Hangul can also provide read-only access to information stored in certain IBM mainframe databases through the use of VIDA for DB2 [TM], as well as ORACLE [R] on OpenVMS through Rdb Access. Data from all these sources can be combined into a single VIEW. Refer to SPD 25.44.xx for the availability of Rdb Access and VIDA.

If access to a DEC DBMS database involves explicit set walking, or if records must be manually connected or disconnected from sets, a user can employ DEC DTR/Hangul language features that are specific to DEC DBMS access. However, if the user employs VIEWS or implicit set walking, DEC DTR/Hangul can access information in DEC DBMS databases using the same syntax used for data from an RMS file.

Report Generation

The DEC DTR/Hangul REPORT statement produces simple formatted reports without formatting statements. It also allows a user to override the default format when more complex reports are required. Reports can either be page-based, printable documents, or table-based formatted data that can be input by a spreadsheet.

Column headers and, in page-based reports, page headers containing title, date, and page numbers are produced automatically. Simple statements (AT TOP, AT BOTTOM) create page headers and trailers for controlling breaks, page breaks, or a report summary. DEC DATATRIEVE provides all of its statistical functions and value expressions within the REPORT statement.

Reports can be output in a variety of output formats: table reports are produced in DTIF format, and page-based reports in DDIF, PostScript [R] and Text formats. Usage of DDIF and Postscript allows a variety of text attributes (size, font types, rendition) to be applied to any part of the report to obtain a boardroom-quality output. These attributes, and other printing characteristics such as page size and orientation, can be selected from DEC DATATRIEVE through simple statements without requiring the use of a graphical terminal. Simple character-cell-based reports are also available using the Text format. Using the CDA converter library, DTIF and DDIF reports can be converted to a variety of output formats, allowing interoperability with a number of popular applications.

The Report Writer provides two layout tools: a grid printout of the CDA report layout with placement of rows and columns, including those with varying font types, and a graphical printout of the layout page, with placement of the different report objects (such as header, footer, body).

Reports can be generated from data stored in DEC RMS files, DEC DBMS and DEC Rdb/VMS databases, certain IBM mainframe databases accessed through the use of VIDA for DB2 or DATATRIEVE VIEWS that combine any of these without any change in the syntax of the REPORT statement.

Graphics

DEC DTR/Hangul includes a number of predefined plots invoked with a single command that takes standard record selection expressions as arguments, and creates bar, pie, line and scattered point plots of the information selected. Plots can be displayed on DIGITAL graphics terminals, such as VT340 (See OPTIONAL HARDWARE section for a list of specific supported terminals). Hard copies can be obtained from terminals by attaching a DIGITAL device which supports the SIXEL protocol (e.g. LA50, LA75). For users of DECwindows, graphics can be displayed in DECterm windows.

Korean Data Handling Capabilities

- Hangul instructions, help and error messages in Command Line Mode, Guide Mode, as well as in the ADT utility.
- Hangul character deletion, cursor left, cursor right in Command Line Mode.
- Hangul character string store, retrieve, modify, and search functions.
- HTPU and HEDT editors are supported in Command Line Mode.
- Hangul handling in Datatrieve Functions FN$UPCASE, FN$TRANS_LOG, FN$CREATE_LOG, FN$DELETE_LOG and FN$STR_LOC.
- Hangul characters supported in report main header, field header, and content output.
- Help and Error messages are provided in both Korean and English.

Compatibility

DEC DTR/Hangul is fully compatible with DEC DATATRIEVE and largely upward compatible from DATATRIEVE-11. A utility is provided to extract the contents of a DATATRIEVE-11 dictionary in a format to be entered into CDD/Repository for OpenVMS. Some syntactic and semantic differences do exist between DATATRIEVE-11 and DEC DTR/Hangul. Procedures copies with the EXTRACT utility may require modification.

SOURCE CODE INFORMATION

The following source code modules are provided with binary, single-use license options on all magnetic distribution media:

- Function definitions
- Text definitions

- Macro library for function and text definitions
- Message text
- Sample callable DATATRIEVE programs
- DATATRIEVE dictionary object definitions:
  - Plots
  - Domains
  - Records
  - Procedures
  - Tables
- Language INCLUDE files for the DATATRIEVE Access Block (used by Callable DATATRIEVE)
- Language INCLUDE files for literal values, external symbols and routine entry point definitions
- Language TEMPLATE files for use with DEC LSE

This source code is provided on an "as is" basis without any warranty of any kind, either express or implied.

HARDWARE REQUIREMENTS

VAX Processors Supported:

VAXft Model 110,
VAXft Model 310,
VAXft Model 410,
VAXft Model 610,
VAXft Model 612

VAX:
VAX 4000 Model 100,
VAX 4000 Model 200,
VAX 4000 Model 300,
VAX 4000 Model 400,
VAX 4000 Model 500,
VAX 4000 Model 600,

VAX 6000 Model 200 Series,
VAX 6000 Model 300 Series,
VAX 6000 Model 400 Series,
VAX 6000 Model 500 Series,
VAX 6000 Model 600 Series,

VAX 7000 Model 600 Series

VAX 8200, VAX 8250, VAX 8300,
VAX 8350, VAX 8500, VAX 8530,
VAX 8550, VAX 8600, VAX 8650,
VAX 8700, VAX 8800, VAX 8810,
VAX 8820, VAX 8830, VAX 8840,

VAX 9000 Model 110,
VAX 9000 Model 210,
VAX 9000 Model 300 Series,
VAX 9000 Model 400 Series

VAX 10000 Model 600 Series

VAX-11/730, VAX-11/750,
VAX-11/780, VAX-11/785

MicroVAX:
MicroVAX II, MicroVAX 2000,
MicroVAX 3100 Model 10/10E,
MicroVAX 3100 Model 20/20E,
MicroVAX 3100 Model 30,
MicroVAX 3100 Model 40,
MicroVAX 3100 Model 80,
MicroVAX 3100 Model 90,
MicroVAX 3300, MicroVAX 3400,
MicroVAX 3500, MicroVAX 3600,
MicroVAX 3800, MicroVAX 3900,

VAXstation:
VAXstation II, VAXstation 2000,
VAXstation 3100 Model 30,
VAXstation 3100 Model 38,
VAXstation 3100 Model 40,
VAXstation 3100 Model 48,
VAXstation 3100 Model 76,
VAXstation 3200, VAXstation 3500,
VAXstation 3520, VAXstation 3540

VAXstation 4000 Model 60,
VAXstation 4000 Model 90,
VAXstation 4000 VLC

VAXserver:

VAXserver 3100, VAXserver 3300, VAXserver 3400,
VAXserver 3500, VAXserver 3600, VAXserver 3602,
VAXserver 3800, VAXserver 3900

VAXserver 4000 Model 200,
VAXserver 4000 Model 300,
VAXserver 4000 Model 500

VAXserver 6000 Model 210,
VAXserver 6000 Model 220,
VAXserver 6000 Model 310,
VAXserver 6000 Model 320,
VAXserver 6000 Model 410,
VAXserver 6000 Model 420,
VAXserver 6000 Model 510,
VAXserver 6000 Model 520,
VAXserver 6000 Model 610,
VAXserver 6000 Model 620,

VAXserver 6000 Model 630

Other Hardware Requirements:

Korean terminals and/or printers are required for Korean input and output operations.

Korean Terminals Supported: VT382K

Korean Printers Supported: LA380-K

- A minimum of 1MB of memory. Typical systems with several layered products installed will require more than 1MB of memory.
- Mass storage with a minimum of 9,000 disk blocks for DEC DTR/Hangul system software
- RD53 system disk.

Disk Space Requirements (Block Cluster Size = 1):

Required for installation:	16,000 blocks (8.0M bytes)
Required for use (permanent):	11,000 blocks (5.5M bytes)

These block counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options selected.

OPTIONAL HARDWARE

Any device supported by the prerequisite software.

Graphics can be displayed on VT125, VT240, VT241, VT330 and VT340 terminals only. For users of DECwindows, graphics can be displayed in DECterm windows.

CLUSTER ENVIRONMENT

This layered product is fully supported when installed on any valid and licensed VAXcluster* configuration without restrictions. The HARDWARE REQUIREMENTS section of this product's Software Product Description details special hardwares required by this product.

* V5.x VAXcluster configurations are fully described in the VAXcluster Software Product Description (29.78.xx), and include CI, Ethernet and Mixed Interconnect configurations.

SOFTWARE REQUIREMENTS

For VAX Systems

For Systems Using Terminals (No DECwindows Interface):

- OpenVMS/Hangul VAX Operating System V5.5-2
- CDD/Repository for OpenVMS VAX V5.x

For Workstations Running DECwindows Motif:

- OpenVMS/Hangul Operating System V5.5-2 (and necessary components of OpenVMS DECwindows)
- CDD/Repository for OpenVMS VAX V5.x

For CDA output (PostScript [R], DDIF, DTIF): the CDA software V2.0 must be installed. In order to accomplish this, the optional OpenVMS DECwindows Motif V1.1 Base Kit must be installed, even for systems using terminals.

This product may run in either of the following ways:

- Stand-alone execution - running the X11 display server and the client application on the same machine.
- Remote execution - running the X11 display server and the client application on different machines.

OpenVMS DECwindows is a part of the OpenVMS VAX Operating System but must be installed separately. Installation of OpenVMS DECwindows gives users the option to install any or all of the following three components:

- OpenVMS DECwindows Compute Server (Base kit; including runtime support)
- OpenVMS DECwindows Device Support
- OpenVMS DECwindows Programming Support

For stand-alone execution, the following DECwindows component must be installed on the machine:

- OpenVMS DECwindows Compute Server

For remote execution, the following DECwindows component must be installed on the machine:

Server Machine

- OpenVMS DECwindows Compute Server (Base kit; including run-time support)

Client Machine

- OpenVMS DECwindows Compute Server (Base kit; including run-time support)

OpenVMS Tailoring

The following OpenVMS classes are required for full functionality of this layered product:

- VMS Required Saveset
- Network Support
- Programming Support
- System Programming Support
- Utilities

For more information on OpenVMS classes and tailoring, refer to the OpenVMS Operating System Software Product Description (SPD 25.01.xx).

GROWTH CONSIDERATIONS

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

DISTRIBUTION MEDIA

Tape: 9-track 1600 BPI Magtape (PE),
TK50 Streaming Tape

OPTIONAL SOFTWARE

The following products support processing of Hangul data as well as ASCII (English) data.

DEC FMS/Hangul
DEC Rdb/Hangul

The following products support processing of ASCII (English) data only.

DEC DBMS
DEC Language-Sensitive Editor
DEC Rdb/ELN
VAX TDMS
VIDA [TM]

ORDERING INFORMATION

Unlimited Use - OpenVMS VAX:	
Software Licenses:	QL-898A*-**
Software Media:	QA-898A*-**
Software Documentation:	QA-898AA-GZ
Software Product Services:	QT-898A*-**
Concurrent Use:	
Software License:	QL-898A*-3*
Personal Use:	
Software License:	QL-898A*-2*

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

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Each Personal Use license allows one identified individual to use the layered product.

Each Concurrent Use license allows any one individual at a time to use the layered product.

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

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SOFTWARE WARRANTY

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

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