COMPAQ

# Software Product Description

**PRODUCT NAME: OpenVMS/Hanzi VAX Operating System, V7.2** **SPD 25.G6.17**

## DESCRIPTION

OpenVMS/Hanzi VAX V7.2 is the Hanzi (Simplified Chinese) version of the OpenVMS V7.2 operating system. OpenVMS/ Hanzi VAX extends OpenVMS VAX to provide an operating system environment to support Chinese and ASCII characters on VAX series computers. On top of the basic functions of OpenVMS, OpenVMS/Hanzi VAX extends and enhances the system utilities and environment to process Chinese data. Utilities are provided to facilitate the design and maintenance of user-defined characters. Output of user-defined characters is supported on DEC Hanzi terminals and printers via On-Demand Loading, a dynamic font loading feature.

OpenVMS/Hanzi VAX supports Simplified Chinese data representation that conforms to the Primary Set of National Standard Code of Chinese Graphic Character Set for Information Interchange (GB2312-80) of the People's Republic of China. In addition, OpenVMS/Hanzi VAX supports an extension area of 8,836 character positions in the form of user-defined characters.

This SPD describes only the Chinese specific features of OpenVMS/Hanzi VAX which are extensions or additions to OpenVMS. For a description of the base functionality and supported environment of OpenVMS, please refer to *OpenVMS Operating System for Alpha and VAX V7.2 SPD (SPD 25.01.xx)*.

## FEATURES

OpenVMS/Hanzi VAX provides the following Chinese processing features in addition to the base functionality of OpenVMS.

### New Feature on World-Wide PostScript Printing Subsystem

Starting from this version of OpenVMS/Hanzi, a World-Wide PostScript Printing Subsystem (WWPPS) is provided. WWPPS is a generic text-to-PostScript converter that converts various single-byte and multi-byte characters to printable PostScript, and submit to PostScript printer through OpenVMS Print Symbiont. Please refer to *OpenVMS/Hanzi VAX V7.2 Release Notes* for details.

### User Environment

OpenVMS/Hanzi VAX provides the following features for general users:

### Input/Output

Input/Output of Chinese and ASCII characters are supported on Chinese terminals/printers. The Chinese terminal driver provides advanced line editing support for both Chinese and ASCII characters.

### User-defined Characters Support

OpenVMS/Hanzi VAX can display user-defined characters on Chinese terminals and printers which support the On-Demand Loading and Pre-loading of user-defined character fonts. Please refer to the section on "Other Hardware Required" for the supported Chinese terminals and printers.

### DCL Command Language Support

OpenVMS/Hanzi VAX extends DCL to support Chinese processing in the following:

- Chinese in passing parameters
- Chinese equivalence names
- Chinese labels in GOTO and GOSUB statements
- Chinese in SUBROUTINE names and in CALL statements
- Chinese in INQUIRE statements
- Chinese in READ/WRITE statements
- Chinese in MESSAGE/REPLY commands

### Chinese DATE and TIME Display

Utilities such as DIRECTORY and HMAIL in OpenVMS/Hanzi can display date and time in Chinese format.

### Bilingual Help

Bilingual help interface is provided in the system DCL HELP and help subsystems of Chinese utilities. Users can select help in either Chinese or English.

### Bilingual System Messages

Chinese system messages are provided with this version of OpenVMS/Hanzi. Users can choose to receive system messages in either Chinese or English.

### Utilities

OpenVMS/Hanzi VAX provides the following utilities to support Chinese processing in addition to OpenVMS utilities:

### HDUMP

HDUMP enhances DUMP utility to display contents of files or volumes containing both Chinese and ASCII characters. Wrapping of Chinese characters at field boundary is handled correctly.

### HEDT

HEDT is an interactive Chinese text editor, providing many text processing enhancements to EDT. The following features are provided in addition to EDT functions:

- Full DEC Hanzi Character Set Support:
  - — Extended Hanzi character display
  - — Full form and half form character conversion
  - — Character code input in hexadecimal, octal and Quwei codes
- Chinese Text Processing Functions:
  - — Automatic horizontal scrolling
  - — Column select for cut and paste
  - — ASCII/Chinese word wrapping
  - — Left/center/right justification
  - — Set left and right margins
  - — Line drawing/table filling
  - — Chinese date/time
  - — Cursor line/column display
  - — Editing modes:
    - * absolute insert
    - * absolute overwrite
    - * insert within fixed ruler lines
    - * overwrite within fixed ruler lines

### HMAIL

HMAIL extends OpenVMS MAIL utility to support Chinese in subjects, personal names and folder names. Folders can be displayed according to specified Chinese collating sequences. In addition, it supports operations which involve searching of strings that contain Chinese characters. HMAIL invokes HTPU as the default editor.

### Sort/Merge

SORT/MERGE utility in OpenVMS/Hanzi VAX has been extended to handle Chinese data. The following Chinese collating sequences are supported in SORT/MERGE:

- Radical
- Number of strokes
- Pinyin (the Chinese phonetic alphabet)
- Quwei code

Both ascending and descending order of sorting are supported.

Multiple collating sequences can be specified for the same sort key in a single sort.

I/O interfaces, namely file interface and record interface, on the above Chinese collating sequences are supported.

### Chinese Search

The Chinese SEARCH utility is an extended version of the SEARCH utility to support Chinese characters in search strings.

### Character Manager (CMGR)

CMGR in OpenVMS/Hanzi VAX provides a font editor and a set of commands to facilitate creation and maintenance of user-defined character fonts. Collating value can also be associated with the user-defined characters for sorting.

### HTPU and HEVE

HTPU is the Chinese extended version of the DEC Text Processing Utility (DECTPU) providing built-in procedures with enhancement on Chinese text processing. Additional Chinese features are:

- Full form and half form character conversion
- Character class classification
- Line drawing capability
- Symbol composition
- Chinese character deletion and cursor movement
- Chinese character wrapping
- Pattern matching including Chinese characters

HEVE is the Chinese extended version of the Extensible Versatile Editor (EVE) running on HTPU providing a general-purpose Chinese screen editor to process Chinese and ASCII characters. Extended commands which include features such as Chinese word manipulation, line drawing, box drawing and column editing capabilities are available.

### DEBUG Utility

DEBUG utility is enhanced to support Chinese characters on both character cell terminal and graphic (DECwindows Motif) interface workstation. Users can input Chinese characters in DEBUG utility. The DEBUG utility is able to print and echo Chinese characters in its output. In order to utilize DEBUG for Chinese characters support, the locale files for Chinese is required to be installed on OpenVMS/Hanzi VAX V7.2 from the VMSI18N savesets. The VMSI18N savesets can be found in the OpenVMS distribution media and the locale file for Chinese characters support in OpenVMS/Hanzi is "Chinese". For more information, please refers to the OpenVMS/Hanzi VAX V7.2 Release Notes and Installation Guides.

### Programming Run-Time Library

OpenVMS/Hanzi VAX provides the following run-time library to facilitate development of Chinese applications:

### Chinese Processing (HSY$) Run-time Library

OpenVMS/Hanzi VAX provides a Chinese Processing Run-Time Library for program and application development involving Chinese processing. The Run-Time Library routines perform a variety of Chinese processing functions such as string manipulation, read/write operations, character conversion and other Chinese processing operations. These routines can be called from programs written in the VAX programming languages listed below.

### Chinese Screen Management (SMG$) Run-time Library

Chinese SMG provides a set of run-time library routines to perform terminal independent functions on supported Chinese terminals.

### Chinese Text Processing Utility (TPU$) Run-Time Library

Chinese TPU provides a collection of built-in procedures and callable interfaces for Chinese and English text processing in character cell terminal or DECwindows Motif environments.

### Sort/Merge (SOR$) Run-Time Library

Sort/Merge provides a collection of built-in procedures and callable interfaces for sorting/merging Chinese and English.

### Language Support

The following VAX language compilers support Chinese data input, output and manipulation under OpenVMS/Hanzi VAX:

- VAX MACRO
- VAX BASIC
- VAX BLISS-32
- VAX C
- VAX COBOL
- VAX FORTRAN
- VAX PASCAL
- VAX PL/I

### Asian Printing Support

High quality Chinese printing is provided by installing the Asian Printing sub-kit called *ASPS010* bundled with OpenVMS/Hanzi VAX. For details of Asian Printing Support, please refer to *Asian Printing Support for OpenVMS Version 1.0 Installation Guide and Asian Printing Support for OpenVMS Version 1.0 Release Notes*.

## INSTALLATION

COMPAQ requires that a customer's first purchase of this software product includes COMPAQ Installation Services. These services provide for installation of the software product by an experienced COMPAQ Software Specialist.

For subsequent purchases of this product, only experienced customers should attempt installation. COMPAQ recommends that all other customers purchase COMPAQ's Installation Services.

## HARDWARE REQUIREMENTS

### Minimum Hardware Required

*Processors Supported:*

Q-bus Based Systems

- MicroVAX II
- MicroVAX 3300, VAXserver 3300
- MicroVAX 3400, VAXserver 3400
- MicroVAX 3500, VAXserver 3500, VAXstation 3500, VAXstation 3520, VAXstation 3540
- MicroVAX 3600, VAXserver 3600
- MicroVAX 3800, VAXserver 3800
- MicroVAX 3900, VAXserver 3900
- VAX 4000, Models 100, 200, 300, 400, 500, 600
- VAX 4000, Models 50, 100A, 105A, 106A,108, 500A, 505A, 600A, 700A, 705A
- VAXserver 4000, Models 200, 300, 400, 500, 600

NMI Bus-Based Systems

- VAX 8530, VAXserver 8530, VAX 8550, VAXserver 8550
- VAX 8700, VAXserver 8700
- VAX 8800, VAX 8810, VAX 8820, VAX 8830, VAX 8840
- VAXserver 8800, VAXserver 8810, VAXserver 8820, VAXserver 8830, VAXserver 8840

XMI Bus-Based Systems

- VAX 6000 Series, Models 210, 220, 230, 240
- VAX 6000 Series, Models 310, 320, 330, 340, 350, 360
- VAX 6000 Series, Models 410, 420, 430, 440, 450, 460
- VAX 6000 Series, Models 510, 520, 530, 540, 550, 560
- VAX 6000 Series, Models 610, 620, 630, 640, 650, 660
- VAXserver 6000, Models 210, 220, 310, 320, 410, 420, 510, 520, 610, 620, 630
- VAX 8530, VAX 8550, VAXserver 8530, VAXserver 8550
- VAX 8700, VAXserver 8700
- VAX 8800, VAX 8810, VAX 8820, VAX 8830, VAX 8840

- VAXserver 8800, VAXserver 8810, VAXserver 8820, VAXserver 8830, VAXserver 8840, VAX 8842, VAX 8974, VAX 8978
- VAX 7000, Models 610, 620, 630, 640, 650, 660, 710, 720, 730, 740, 750, 760, 810, 820, 830, 840, 850, 860
- VAX 10000, Models 610, 620, 630, 640, 650, 660

VAXBI Bus-Based Systems

- VAX 8200, VAX 8250, VAXserver 8200, VAXserver 8250
- VAX 8300, VAX 8350, VAXserver 8300, VAXserver 8350

SBI Bus-Based Systems

- VAX 8600, VAX 8650, VAXserver 8600, VAXserver 8650

Special System-Specific Internal Bus

- MicroVAX 2000
- MicroVAX 3100, Models 10, 10E, 20, 20E, 30, 40, 80, 85, 88, 90, 95, 96, 98
- VAXserver 3100, Models 10, 10E, 20, 20E
- VAXstation 4000, Models 60, 90, 95, 96
- VAXstation 4000-VLC
- VAX 9000, Models 110, 110VP[1], 210, 210VP, 310, 310VP
- VAX 9000, Models 320, 320VP, 330, 330VP, 340, 340VP
- VAX 9000, Models 410, 410VP, 420, 420VP, 430, 430VP
- VAX 9000, Models 440, 440VP

[1] Vector Processor (VP)

**System Restrictions**

The following list describes version specific restrictions. The DECwindows Motif environment is not supported on these systems.

- MicroVAX I and VAXstation I Systems

The final version of OpenVMS VAX that supports these systems is VMS Version 5.1-1.

- VAX-11/725

VMS V5.1 was the final version to support the VAX-11/725.

OpenVMS VAX Version 6.2 was the final version to support the following:

- VAX-11/730
- VAX-11/750
- VAX-11/751
- VAX-11/780
- VAX-11/782
- VAX-11/785
- VAXft 110
- VAXft 310
- VAXft 410
- VAXft 610
- VAXft 810
- MicroVAX I
- VAXstation 1

OpenVMS VAX Version 7.1 was the final version to support the following:

- VAXstation II/GPX, VAXstation II/QVSS
- VAXstation 2000, VAXstation 2000/GPX, VAXstation 2000/MFB
- VAXstation 3100, Models 30, 38, 40, 48, 76
- VAXstation 3100/GPX, Models 38, 48, 76
- VAXstation 3100/SPX, Models 38, 48, 76

**Processor Restrictions:**

Refer to *OpenVMS Operating System for Alpha and VAX V7.2 SPD (SPD 25.01.xx)* for restrictions on the supported processors.

**Other Hardware Required:**

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

- Hanzi Terminals Supported:

  VT382-C

- Hanzi Printers Controller Supported:

  LA86C, LA84C, LA280-C, LA380-C, LA88-C

On-Demand Loading of user-defined character fonts is supported on VT382-CB, LA86-C, LA84-C, LA280-CB and LA380-C when connected to a VAX system running OpenVMS/Hanzi VAX via one of the following connections:

- Asynchronous Terminal Controllers:

  DMB32, DHB32,
  CXY08, CXA16, CXB16,
  MV2000 Serial Line,
  DMF32, DMZ32,
  DZ11, DZ32, DZV11,
  DZQ11,
  DHV11,
  DHQ11, DHT32

- Terminal Servers:

  DECserver 200 (V3.0)
  DECserver 300 (V1.0)
  DECserver 500 (V2.1)
  DECserver 700
  DECserver 90L (V1.0)
  DECserver 90TL (V1.0)

For a description of On-Demand Loading support in terminal servers, please refer to *DECserver 200 SPD (SPD 27.53.xx), DECserver 300 SPD (SPD 25.J1.xx), DECserver 500 SPD (SPD 26.97.xx), DECserver 90L SPD and DECserver 90TL SPD*.

**Block Space Requirements:(Block Cluster Size = 1)**

The following OpenVMS/Hanzi VAX block space requirements are additional to the OpenVMS block space requirements stated in *OpenVMS Operating System for Alpha and VAX V7.2 SPD (SPD 25.01.xx)*.

- Disk space required for installation:
  113,200 blocks (56,600K bytes)
- Disk space required for use (permanent):
  83,400 blocks (41,700K bytes)

These 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.

**VMSCLUSTER ENVIRONMENT**

VMScluster configurations are supported fully as described in the *OpenVMS Cluster Software Product Description (SPD 29.78.xx)*. Please refer to the SPD for details.

**SOFTWARE REQUIREMENTS**

OpenVMS/Hanzi VAX V7.2 requires OpenVMS Operating System for VAX V7.2.

World-Wide PostScript Printing Subsystem (WWPPS) requires DCPS.

**OpenVMS Tailoring**

The following OpenVMS VAX classes are required for full functionality of OpenVMS/Hanzi VAX:

- OpenVMS VAX Required Saveset
- Utilities

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

**OPTIONAL HANZI SOFTWARE**

For information on other available optional Hanzi software products, contact your local COMPAQ office.

**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: TK50 Streaming Tape

## ORDERING INFORMATION

- Software Licenses:
  - — OpenVMS/Hanzi VAX Operating System User License: QL-0012*-**
  - — OpenVMS/Hanzi VAX Operating System Base and Base Update License: QL-0052*-**
  - — OpenVMS/Hanzi VAX Operating System Interactive User License: QL-XUL2*.Y*
- Software Media (with OpenVMS Extended Documentation Set): QA-0012*-H*
- Software Documentation (with OpenVMS Extended Documentation Set): QA-0012A-GZ
- Software Media (with OpenVMS Base Documentation Set): QA-09S2*-H*
- Software Documentation (with OpenVMS Base Documentation Set): QA-09S2A-GZ

* Denotes variant fields.

For additional information on available licenses, services and media options, refer to the appropriate price book.

## SOFTWARE LICENSING

This software is furnished under the licensing provisions of COMPAQ's Standard Terms and Conditions of Sale. For more information about COMPAQ's licensing terms and policies, contact your local COMPAQ office.

## LICENSE MANAGEMENT FACILITY SUPPORT

This product requires the use of the License Management Facility. License units for this product are allocated on a CPU-capacity plus User/Activity basis.

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

## SOFTWARE PRODUCT SERVICES

A variety of service options are available from COMPAQ. Contact your local COMPAQ office for more information.

## SOFTWARE WARRANTY

This software is provided by Compaq with a 90-day conformance warranty in accordance with the Compaq warranty terms applicable to the license purchase.

## YEAR 2000 READINESS

This product is capable of accurately processing, providing, and/or receiving date data from, into and between the twentieth and the twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the associated product documentation and provided that all hardware, firmware and software used in combination with the product properly exchange accurate date data with the product.

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