

Software Product Description

**PRODUCT NAME: DECwatchdog/Autopilot for OpenVMS VAX, SPD 53.62.00
Version 2.1**

DESCRIPTION

DECwatchdog/Autopilot is a software product designed to improve client/server applications availability by failure detection and automated application recovery.

A copy of DECwatchdog/Autopilot software runs on each computer in a group. A group is composed of 2 to 16 computers communicating across a local area network and collaborating to perform a critical application.

A critical application and the description of the group of computers on which this application runs, form a DECwatchdog/Autopilot mission.

DECwatchdog/Autopilot can manage several missions simultaneously on several jointed or disjointed groups of computers to automate failover of several independent applications.

Used on top of redundant or partially redundant hardware, DECwatchdog/Autopilot provides unattended operation and mission continuity.

DECwatchdog/Autopilot performs four different roles:

- Mutual watch
- Distributed lock management
- Master/Slave management
- Automated recovery

Features

Mutual Watch

For each mission, DECwatchdog/Autopilot periodically watches the different computers of the group. DECwatchdog/Autopilot detects CPU failures and network failures. Detection delay can be modified from 5 seconds to 2 minutes. When the group uses redundant networks, DECwatchdog/Autopilot differentiates network failures from computer failures. When the group includes more than 2 computers, DECwatchdog/Autopilot localizes network failures by deduction.

Distributed Lock Management

For each mission, the group of computers can share a set of up to 24 resources. A resource represents either:

- A physical device identifier such as disk, tape, line or peripheral
- An access path to data or NFS® files
- Any virtual resource, flag, or event

Master/Slave Management

There are three different roles for computers in a mission: master, slave, and satellite. DECwatchdog/Autopilot automatically assigns master and slave roles for each mission, conforming to user's preferences. A computer which is neither slave nor master is called a satellite computer.

Automated Recovery

DECwatchdog/Autopilot can automatically initiate standard command files on each computer in case of any state transition of

- computers
- networks
- resources

Command files include any application recovery action.

Other Features

DECwatchdog/Autopilot is specifically designed to manage heterogeneous groups of computers. While computers do not necessarily run the same operating system, a compatible version of DECwatchdog/Autopilot must be present on each of them.

DECwatchdog/Autopilot supports planned service interruptions for hardware maintenance or operating system upgrades. It allows online reconfiguration of applications and groups.

DECwatchdog/Autopilot does not prevent erroneous access conflicts on shared peripherals. Additional safe locking mechanisms will be invoked in command files when necessary.

HARDWARE REQUIREMENTS

Processors Supported

VAX: VAXft Model 110,
 VAXft Model 310,
 VAXft Model 410,
 VAXft Model 610,

VAXft Model 612

VAX 4000 Model 200,
VAX 4000 Model 300,
VAX 4000 Model 500,
VAX 4000 Model 600
VAX 4000 Model 700

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 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-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 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

Processors Not Supported

MicroVAX I, VAXstation I, VAX-11/725, VAX-11/782, VAXstation 8000

Processor Restrictions:

A TK50 Tape Drive is required for standalone MicroVAX 2000 and VAXstation 2000 systems.

Disk Space Requirements (Block Cluster Size = 1)

Disk space required for installation: 3000 blocks

Disk space required for use (permanent): 1400 blocks

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.

OPTIONAL HARDWARE

The full DECwatchdog functionality is correctly performed on redundant DECsystems communicating through two independent Ethernet links.

CLUSTER ENVIRONMENT

DECwatchdog/Autopilot is supported and can be used in VAXcluster environment, but it requires the development of special additional command procedures and resources management to operate properly in this environment.

During quorum loss in a VAXcluster, processes are "jammed" or keep running depending whether they require clustered resource or not. Therefore DECwatchdog/Autopilot's behaviour during cluster transition and node reboot depends on the type of application, cluster and mission configuration.

DECwatchdog/Autopilot leaves the choice to the customer with the development of his own command procedures and mission configuration, to decide if DECwatchdog nodes in cluster must be considered as faulty or running during quorum loss.

SOFTWARE REQUIREMENTS

- OpenVMS Operating System V6.1
- DEC TCP/IP for OpenVMS VAX version 3.1

OpenVMS Tailoring

All OpenVMS classes are required for full functionality of this layered product.

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

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

ORDERING INFORMATION

Software Licenses: QL-33YA*-**

Software Media: QA-33YA*-**

Software Documentation: QA-33YA*-GZ

Software Product Services: QT-33YA*-**

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

SOFTWARE LICENSING

This software is furnished only under a license. For more information about Digital's licensing terms and policies, contact your local Digital office.

License Management Facility Support

This layered product supports the OpenVMS License Management Facility.

License units for this product are allocated on a CPU-capacity basis.

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

SOFTWARE PRODUCT SERVICES

Digital can help the user in designing a redundant system integrating SCSI disk multiplexors, uninterruptable power supply, and communications servers that can be advantageously combined with DECwatchdog/Autopilot.

For more information on these or other services, please contact your local Digital office.

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.

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

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