
OpenVMS Release Notes Addendum for VMScluster Systems

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This manual describes modified and enhanced features, upgrade, and compatibility information for VMScluster systems.

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Software Versions: OpenVMS AXP Version 1.5
OpenVMS VAX Version 5.5-2
OpenVMS VAX Version 6.0

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Preface

Introduction

Intended Audience

This release notes addendum addresses persons responsible for setting up and managing VMScluster systems.

Document Structure

This addendum contains one chapter of release notes that are specific to VMScluster systems.

Associated Documents

Refer to the following documents for additional information about the VMScluster topics discussed in these release notes:

- *OpenVMS VAX Version 6.0 Release Notes*
- *OpenVMS AXP Version 1.5 Release Notes*
- *OpenVMS VAX Version 6.0 New Features Manual*
- *VMScluster Systems for OpenVMS*
- *OpenVMS Compatibility Between VAX and AXP*
- *A Comparison of System Management on OpenVMS AXP and OpenVMS VAX*
- *Guidelines for VAXcluster System Configurations*
- *VAXcluster Software for OpenVMS VAX Software Product Description (SPD 29.78.nn)*
- *VMScluster Software for OpenVMS AXP Software Product Description (SPD 42.18.nn)*

Conventions

In this addendum:

- Every use of OpenVMS AXP means the OpenVMS AXP operating system, every use of OpenVMS VAX means the OpenVMS VAX operating system, and every use of OpenVMS means both the OpenVMS AXP operating system and the OpenVMS VAX operating system.
- All references to VMS Version 5.5–2 refer to V5.5–2, not to VMS Version A5.5–2.
- The term VMScluster supercedes VAXcluster. All Digital clustered systems are now referred to as VMScluster systems. Discussions that refer to VMScluster environments apply to both VAXcluster systems that include

only VAX nodes and VMScLuster systems that include at least one AXP node, unless indicated otherwise.

The following conventions are also used in this addendum:

<i>italic text</i>	Italic text emphasizes important information, indicates variables, and indicates complete titles of manuals. Italic text also represents information that can vary in system messages (for example, Internal error <i>number</i>), command lines (for example, /PRODUCER= <i>name</i>), and command parameters in text.
UPPERCASE TEXT	Uppercase text indicates a command, the name of a routine, the name of a file, or the abbreviation for a system privilege.
numbers	All numbers in text are assumed to be decimal, unless otherwise noted. Nondecimal radices — binary, octal, or hexadecimal — are explicitly indicated.

VMScluster Release Notes

1.1 Overview

The following notes contain information that supplements the *OpenVMS VAX Version 6.0 Release Notes* and the *OpenVMS AXP Version 1.5 Release Notes*.

This addendum is divided into four main topics:

- OpenVMS AXP V1.5 and OpenVMS VAX V6.0 interoperability
- FDDI support
- DSSI configurations
- DEC 3000 and DEC 2000 support and configuration

In a dual-architecture VMScluster system, you can use the latter three items on AXP systems running OpenVMS AXP Version 1.5 and VAX systems running either OpenVMS VAX Version 5.5-2 or Version 6.0.

1.2 OpenVMS AXP V1.5 and OpenVMS VAX V6.0 Interoperability

1.2.1 Compatibility

Nodes running OpenVMS AXP V1.5 now can be clustered with nodes running either OpenVMS VAX Version 6.0 or Version V5.5-2 (not Version A5.5-2). However, Digital does not recommend clustering OpenVMS AXP V1.5 with both VAX versions at the same time.

1.2.2 Rolling Upgrades in Dual-Architecture Clusters

During rolling upgrades from OpenVMS VAX Version V5.5-2 to Version 6.0, you might need to temporarily run both VAX versions simultaneously with OpenVMS AXP Version 1.5.

Although Digital does not recommend running more than two versions of OpenVMS VAX in a dual-architecture cluster for an extended period of time, it can be done for the limited duration of the upgrade procedure. This procedure allows a VMScluster system running on multiple system disks to continue to provide service while the system software is being upgraded.

Note: There are no known problems with running the three operating system versions in the same VMScluster system. However, extensive testing has not been done to qualify this type of configuration. Digital strongly discourages running three operating system versions in a VMScluster system, especially one that is doing production work.

VMScluster Release Notes

1.2 OpenVMS AXP V1.5 and OpenVMS VAX V6.0 Interoperability

1.2.3 SYSMAN Restriction

Do not issue System Management (SYSMAN) utility commands that are specific to AXP processors against VAX processors. This can cause the OpenVMS VAX Version 6.0 SYSMAN server (SMISERVER) to return an access violation (ACCVIO) error.

Refer to *A Comparison of System Management on OpenVMS AXP and OpenVMS VAX* for a discussion of SYSMAN command usage.

1.2.4 Where to Find Interoperability Information

Virtually all OpenVMS VAX system management utilities, command formats, and tasks are identical in the OpenVMS AXP environment. However, some exceptions exist for dual-architecture VMScluster systems that system managers must consider for proper setup and management of these VMScluster systems.

For clustering, OpenVMS AXP Version 1.5 is functionally equivalent to OpenVMS VAX Version 5.5–2. The following functional and architectural differences apply to a dual-architecture VMScluster running OpenVMS AXP Version 1.5 and OpenVMS VAX Version 6.0,

- Apply the same functional differences that are documented for OpenVMS VAX Version 6.0 and Version 5.5–2.
- Apply the same architectural differences that are documented for OpenVMS AXP Version 1.5 and OpenVMS VAX Version 5.5–2.

Functional and architectural differences and considerations are discussed in the following OpenVMS documentation manuals:

Document Title	Description
<i>OpenVMS VAX Version 6.0 Release Notes</i>	Chapter 2 describes features, changes, and restrictions specific to VMScluster systems running OpenVMS VAX Version 6.0, including: <ul style="list-style-type: none">• Security changes• Support for multiple LAN adapters• Batch and print queuing changes• Volume Shadowing for OpenVMS changes• Virtual I/O cache

VMScluster Release Notes

1.2 OpenVMS AXP V1.5 and OpenVMS VAX V6.0 Interoperability

Document Title	Description
<i>OpenVMS AXP Version 1.5 Release Notes</i>	<p>Chapter 4 describes system management features, changes, and restrictions specific to systems running OpenVMS AXP Version 1.5, including:</p> <ul style="list-style-type: none">• AUTOGEN• Backup utility• DECnet support for cluster alias• Monitor utility• Mount utility• Security auditing• System Management utility
<i>OpenVMS VAX Version 6.0 New Features Manual</i>	<p>Describes the new features of the OpenVMS VAX Version 6.0 operating system. Refer to Chapter 4 for the following cluster-specific topics:</p> <ul style="list-style-type: none">• CLUSTER_CONFIG.COM options for tape servers• MSCP dynamic load balancing• Virtual balance slots• Virtual I/O cache to improve virtual read performance• Multiple queue managers• Security changes impacting system management• SYSMAN startup logging and shutdown
<i>VMScluster Systems for OpenVMS</i>	<p>Describes VMScluster system management tasks, including:</p> <ul style="list-style-type: none">• Interoperability information between OpenVMS AXP Version 1.5 and VMS Version 5.5–2 in Chapter 1• Single security domains on VMScluster systems in Chapter 3• Management of multiple queue managers on OpenVMS VAX Version 6.0 computers in Chapter 6
<i>OpenVMS Compatibility Between VAX and AXP</i>	<p>Compares and contrasts features on computers running OpenVMS VAX Version 6.0 and OpenVMS AXP Version 1.5. The manual focuses on the features provided to end users, system managers, and programmers.</p>
<i>A Comparison of System Management on OpenVMS AXP and OpenVMS VAX</i>	<p>Compares how specific system management tasks differ or remain the same between OpenVMS AXP Version 1.5 and the following VAX releases:</p> <ul style="list-style-type: none">• VAX VMS Version 5.5• OpenVMS VAX Version 6.0

VMScluster Release Notes

1.3 FDDI Support

1.3 FDDI Support

When OpenVMS AXP Version 1.5 initially shipped, VMScluster systems supported the CI (computer interconnect), DSSI (Digital Storage Systems Interconnect) and Ethernet interconnects. Now, the Fiber Distributed Data Interface (FDDI) is supported as a VMScluster interconnect for systems running OpenVMS AXP Version 1.5. Alpha AXP FDDI adapters are supported on the full range of DEC 3000, DEC 4000, DEC 7000 and DEC 10000 systems.

In a dual-architecture VMScluster system, you can use the FDDI interconnect for SCS node-to-node communications between AXP systems running OpenVMS AXP Version 1.5 and VAX systems running either OpenVMS VAX Version 5.5-2 or Version 6.0.

1.3.1 Supported Adapters

The following FDDI adapters are supported:

- DEMFA (XMI to FDDI)
- DEFTA (TURBOchannel to FDDI)
- DEFAA (Futurebus to FDDI)

The DEFZA adapter is not supported.

1.3.2 Enabling FDDI

On systems running OpenVMS AXP Version 1.5, set the PE3 system parameter to a value of 1 to enable clustering over the supported FDDI adapters. If PE3 is set to 0 on a system that has FDDI adapters installed, a warning message similar to the following is displayed during startup:

```
%VMScluster-W-NOSUPPORT, FXA is NOT SUPPORTED by the cluster software
```

You can ignore the message.

Note: Setting the PE3 system parameter to enable FDDI VMScluster configurations is specific to OpenVMS AXP Version 1.5 only. Beginning with the next release of OpenVMS AXP:

- FDDI will be enabled by default.
- The PE3 system parameter will be reserved for Digital use only and will no longer be used to enable FDDI.

1.3.3 Satellite Booting

Booting satellite nodes over the FDDI is not supported on VMScluster systems running OpenVMS AXP Version 1.5. When using satellite nodes with FDDI adapters, the embedded Ethernet adapter is used for initial downline load of OpenVMS. FDDI VMScluster traffic is enabled during the boot process.

When installing the OpenVMS AXP operating system or when running the CLUSTER_CONFIG.COM command procedure, you are asked if the Ethernet will be used for cluster communication. Respond Y to this question if you intend to use Ethernet to boot a VMScluster system and then use FDDI for general cluster traffic. For example:

```
Will the Ethernet be used for cluster communications (Y/N)? Y
```

Satellite booting over the FDDI will be supported in a future release of OpenVMS.

1.3.4 UETP Not Supported

UETP is not supported for FDDI devices on VMScluster systems running OpenVMS AXP Version 1.5. If you attempt to run the UETP software on an AXP system, warning messages are displayed. You can ignore these messages.

UETP will support FDDI devices in a future release.

1.3.5 Using the DEMFA Adapter on AXP Systems

On systems running OpenVMS AXP Version 1.5, the DEMFA device's FXDRIVER requires a fix to ensure that the DEMFA self-test completes prior to the DEMFA network address being set.

Contact your Digital support person to acquire and apply this fix before you enable the DEMFA adapter.

1.4 DSSI Configurations

1.4.1 Support

OpenVMS AXP V1.5 now supports:

- Quad-host DSSI configurations with DEC 4000 systems
DEC 4000 systems can be configured only as end nodes on a DSSI bus, therefore, quad-host configurations must include at least two VAX systems.
- KFQSA Q-bus to DSSI configurations
VAX processors that use the KFQSA adapter can be placed on the same DSSI bus as DEC 4000 processors.

1.4.2 KFQSA Use

The following list describes use of the KFQSA adapter:

- The performance of the KFQSA is slow relative to newer generation DSSI adapters. Take this into consideration when you configure KFQSA adapters in VMScluster systems using high performance VAX and AXP computers.
- VMScluster System Communications Services (SCS) traffic is not supported over the KFQSA adapter. Only disk and tape data traffic is supported on the KFQSA adapter. Thus, AXP and VAX processors can share data on the DSSI in a VMScluster, but SCS node-to-node communication between VAX systems configured with KFQSA adapters and other cluster members, is possible only over some other type of interconnect, such as Ethernet or FDDI.

1.5 DEC 2000 Model 300 Support

1.5.1 New Support for DEC 2000 Systems

VMScluster systems running OpenVMS AXP Version 1.5 now support DEC 2000 systems. The DEC 2000 systems must be running OpenVMS AXP Version 1.5-1H1.

Note: OpenVMS AXP Version 1.5-1H1 is a limited hardware release. Functionally, OpenVMS AXP Version 1.5-1H1 and Version 1.5 are the same in regard to VMScluster system features and capabilities.

VMScLuster Release Notes

1.6 Support for Larger Configurations

1.6 Support for Larger Configurations

1.6.1 Support for Up to 50 DEC 3000 and DEC 2000 Alpha AXP Systems

When OpenVMS AXP Version 1.5 initially shipped, VMScLuster configurations supported a maximum of twelve DEC 3000 systems. Now, VMScLuster systems running OpenVMS AXP Version 1.5 support a combined total of up to 50 DEC 3000 and DEC 2000 AXP systems. The following configuration rules apply:

- The DEC 2000 systems must be running OpenVMS AXP Version 1.5-1H1.
- For DEC 2000 systems, communication is supported over Ethernet interconnects only.
- For DEC 3000 systems, communication is supported over Ethernet and FDDI interconnects.

Note: In VMScLuster configurations configured with both VAX and AXP systems, the total number of systems supported remains at 96 nodes.

1.6.2 Configuration Rules

The following rules apply to AXP systems in a VMScLuster configuration:

- A maximum of three DEC 7000 and DEC 10000 systems.
- A maximum of two DEC 4000 systems.
- A maximum of 50 DEC 3000 and DEC 2000 systems.
- A maximum of two CI adapters can be configured on a DEC 7000 or DEC 10000 system.
- A maximum of two LAN adapters can be configured on an Alpha AXP system.
- DEC 4000, DEC 7000, and DEC 10000 systems require a system disk that is accessed via a local controller or through a local CI or DSSI connection. These systems cannot be configured to boot as VMScLuster satellite nodes.

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