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ALL-IN-1 Information Update

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The *ALL-IN-1 Information Update* is a quarterly publication reporting on important ALL-IN-1 Software Performance Reports (SPRs), management, and tuning. It also describes workarounds and provides customers with information that may help them avoid problems. Much of the material is developed from SPR answers significant to the general audience and is printed here to supplement the maintenance updates.

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Susan A. Thompson, Editor

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INTRODUCTION

Welcome to the February 1990 issue of the *ALL-IN-1 Information Update*. The *ALL-IN-1 Information Update* is a quarterly publication that aims to keep you up-to-date with ALL-IN-1 and contains information that is useful to system managers, application programmers, and users of ALL-IN-1.

Some of the articles for the *ALL-IN-1 Information Update* are developed from reports of problems that we have received from customers and aim to help you to avoid these problems. Other articles contain useful information about ALL-IN-1 features of which users might not be aware.

If you have any questions about ALL-IN-1 Versions 2.2 or 2.3 and are covered by a service contract, contact your local Digital support center.

We are eager to provide you with useful information. Therefore, please take the time to complete the Reader's Comments page at the back of this issue. This will help us get a better idea about the type of articles you would like to see in future issues.

INSTALLATION

Problem Running the Pre-Installation Tool

The Pre-Installation Tool (PIT) enables you to identify and copy all systemwide customizations to the new systemwide site areas supplied with ALL-IN-1 Version 2.3.

A systemwide customization is an element that is available to all users of the system. The PIT only deals with systemwide elements because the site areas are systemwide and any element placed in the site areas can be used by all users of the system. Therefore, the default directories and form libraries that the PIT scans are the systemwide ones, for example, OA\$LIB and OA\$LIB:OAFORM.FLB.

The PIT also gives you the option to specify additional directories and form libraries that contain customized elements. The additional directories and form libraries are referred to in this article as "additional locations."

We understand you may have already created your own site areas for the same purpose as those introduced in ALL-IN-1 Version 2.3. For example, you may have created MYDIR:MYFORMS.FLB, which contains customizations of Digital forms. Since Customization Management requires that customizations to Digital elements reside in the ALL-IN-1 Version 2.3 site areas, the PIT allows you to specify additional locations that may contain customized Digital elements. Any Digital elements found in these additional locations are copied to the corresponding site area.

Problem Description

If you have placed new elements (that is, elements not based on Digital elements) in the additional locations, the PIT assigns these elements either the NEW/NO_CONFLICT or the NEW/CONFLICT status (see the *ALL-IN-1 Installation Guide Part 1 Base Installation* for a description of these status values). The PIT reports that they exist, but does not copy them to the site areas.

When you run the PIT in FULL mode, elements with the status NEW/NO_CONFLICT are recorded in the Customization Management database, but the LIVE_DISK_LOCATION field is left blank. This results in the following problems:

- If the element is a form and you try to delete it from the Customization Management database, the following error message is displayed:

Unable to find form library

This is because the PIT does not store the file name of the library containing the form.

- If the element is not a form (for example, a script or document template), the element is deleted from the original source directory when you delete it from the Customization Management database; the PIT has placed the name of the original source directory in the database.

Note that the PIT was not designed to scan your own applications. However, you may want to do this to see if any elements in your application conflict with Digital elements. The PIT assigns the elements of your application either the NEW/NO_CONFLICT or the NEW/CONFLICT status.

INSTALLATION

Workaround

Digital recommends the following solutions to the problems described in the previous section:

- If you have created your own applications and you want to see if any elements in these applications will conflict with Digital elements, run the PIT in REPORT mode and specify the additional locations.

If you have many additional locations to scan, define short logical names for each of the locations. You need to do this because a DIGITAL Command Language (DCL) symbol is set up to contain a list of the locations and there is a limit to the number of characters that can be stored in a symbol.

- If you have a systemwide directory and you want only the customizations to Digital elements to be copied to the site areas, move these elements to the standard Digital areas and run the PIT in FULL mode without specifying any additional locations.
- If you have applications or systemwide directories and you want all elements from these directories to be placed in the new site areas, do the following:
 1. Run the PIT in REPORT mode and specify these directories.
 2. Copy all the elements from these directories to the standard ALL-IN-1 areas, such as OA\$LIB and OA\$LIB:OAFORM.FLB.
 3. Run the PIT in FULL mode. The PIT copies the elements to the appropriate site directories and enters a record in the Customization Management database.
- If you have already run the PIT in FULL mode, delete all elements from CM\$SITELOG that have both the LIVE_FLAG field set to OA\$Y and a blank LIVE_DISK_LOCATION field.

NOTE

The live disk location for all elements is correct in the PIT Report.

SYSTEM MANAGEMENT

Creating User Accounts

This article describes two problems you should be aware of when you create ALL-IN-1 user accounts. Read this article if:

- You use the Mail directory in ALL-IN-1 and you use deferred updates to the Mail directory
- User accounts are set up under a common group directory

Deferred Updates to the Mail Directory

If you use the Mail directory in ALL-IN-1 and you use deferred updates to the Mail directory, the DDSID field in the user's ALL-IN-1 profile entry is not completed when you create a user account. When the user enters ALL-IN-1, the following message is displayed:

You could not be authenticated in the Mail directory

For this reason, we recommend that you do not defer updates to the Mail directory. If, however, you have already created accounts for each user when Mail directory updates were deferred, correct the problem of the empty DDSID field as follows:

1. Once the Mail directory has been updated, find the value of the user's DDSID and assign this value to a temporary symbol (#DDSID in the example). To do this, enter the following command from ALL-IN-1:

```
<GET #DDSID=SUBSCRIBER:USERIDI.DDSID["user"]
```

where:

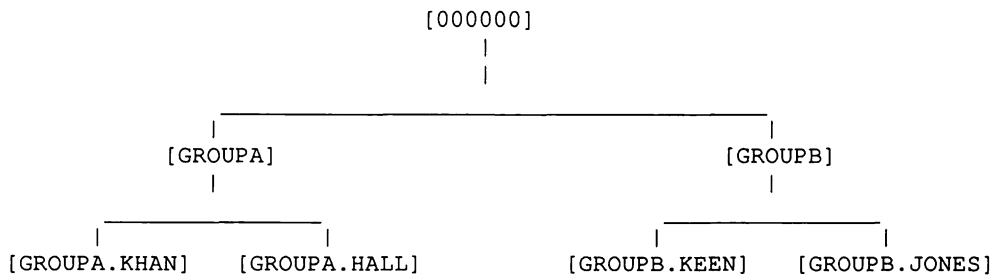
user is the ALL-IN-1 account name.

2. Enter the DDSID in the user's account details. To do this, enter:

```
<WRITE CHANGE PROFIL USER="user", DDSID=#DDSID
```

Group Directories for ALL-IN-1 Accounts

If you set up ALL-IN-1 user accounts under a common group directory, as in the example in Figure 1, problems may occur when you delete or modify accounts.

Figure 1: Group Directories for ALL-IN-1 Accounts

If you set up user accounts in this way and a user's entry in the VMS user authorization file (UAF) does not include the full specification of the user's directory, when you delete or modify the account, all other accounts under the same common directory are also deleted or modified.

In the example shown in Figure 1, if KEEN's UAF entry points to [GROUPB], when you delete this account, the account for user JONES is also deleted. Similarly, if you use the Rename account (RNA) option to change KEEN's account name to EAGER, the group directory is renamed from [GROUPB] to [EAGER], and all users under this directory lose access to their files.

For this reason, we recommend that when you create ALL-IN-1 user accounts, you make the user's VMS directory a top-level directory. If, however, you need to set up accounts under a common directory, do the following:

1. Ensure that the user's UAF entry includes the directories of which the user's directory is a subdirectory. For example, user KEEN's UAF entry in the earlier example should be:

```
[GROUPB.KEEN]
```

If you have already created accounts under a common directory and the UAF entry does not point to the user's directory, use the VMS Authorize Utility to change the UAF entry for each of the accounts. For example, to change the UAF entry for user JONES in the example, enter the following commands:

```
$ MC AUTHORIZE
UAF> MODIFY JONES/DIRECTORY=[GROUPB.JONES]
```

2. Define a rooted logical name for each group directory and include this logical name in the Directory field of each user's account details in the ALL-IN-1 user profile.

For example, to create a rooted logical name GROUPA_USERS for the [GROUPA] common directory in the example, enter the following command:

```
$ DEFINE/SYSTEM/EXECUTIVE_MODE/TRANSLATION_ATTRIBUTES=(CONCEAL,TERMINAL) -
-$GROUPA_USERS device:[GROUPA.]
```

where:

device is the physical device name of the device holding the directory. Do not define the rooted logical name to specify another logical name that defines the physical device.

For each user whose account is a subdirectory of the group directory, include this logical name in the Directory field of the user's account details. For example, for user KHAN, the Directory field should specify:

```
GROUPA_USERS:[KHAN.default_directory]
```

where:

default_directory is the ALL-IN-1 directory.

Using ALL-IN-1 in a VAXcluster System

This article discusses some of the points you need to consider when you run ALL-IN-1 in a VAXcluster system or upgrade from a single node to a VAXcluster configuration.

You can run ALL-IN-1 in a common-environment VAXcluster system (previously known as a homogeneous VAXcluster system) or a multiple-environment VAXcluster system (previously known as a heterogeneous VAXcluster system).

In a common-environment VAXcluster system, the operating environment is identical on each member node, because the nodes are run from the same system files. The nodes are set up with identical user accounts, the same known images (such as ALL-IN-1) are installed, the same logical names are defined, and mass storage devices and queues are shared. In effect, users in a common-environment VAXcluster system can log in to any node and work in the same operating environment. For example, in such a VAXcluster system, users can log in to any node and use ALL-IN-1.

In a multiple-environment VAXcluster system, the environment varies from node to node, and users can work in environments that are specific to the node they are logged in to. A multiple-environment VAXcluster system is effective when you want to share data among member nodes, but when you want certain nodes to serve specialized needs.

For example, you might want to set up a three-node VAXcluster system in which ALL-IN-1 can be used on two nodes, while the third node is set up exclusively for batch processing of large inventory jobs. In this case, the nodes from which ALL-IN-1 is available are set up with a common environment, sharing users, queues, and access to mass storage devices, while the third node runs in its own restricted environment and ALL-IN-1 is unavailable.

In the example multiple-environment VAXcluster system, to make ALL-IN-1 available on the third node (which is not part of the common-environment VAXcluster system), you must install ALL-IN-1 on that node.

Unless otherwise stated, references to a VAXcluster system in this article mean a common-environment VAXcluster system or, in a multiple-environment VAXcluster system, the part of the VAXcluster system with the common environment. If you have a multiple-environment VAXcluster system, but are running ALL-IN-1 in a part of the VAXcluster system that is set up like a common-environment VAXcluster system, the suggestions apply to the common-environment part of your system just as much as they apply to a common-environment VAXcluster system; you can ignore the nodes that are not running ALL-IN-1.

In a VAXcluster system where VAX processors are used as workstations, but ALL-IN-1 and Message Router are not installed, users use the DCL command SET HOST to access the nodes where ALL-IN-1 and Message Router are running. These nodes can be ignored as far as the VAXcluster management of ALL-IN-1 is concerned.

This article describes how to use ALL-IN-1 in a common-environment VAXcluster system where either:

- ALL-IN-1 and Message Router are installed and running on all nodes in the VAXcluster system
- ALL-IN-1 is running on all nodes in the common-environment VAXcluster system, but Message Router is remote (that is, it is not installed in the common-environment part of your VAXcluster system)

SYSTEM MANAGEMENT

Running ALL-IN-1 in a common-environment VAXcluster system is not complex. In a VAXcluster system, the tasks that you should consider are:

- Adjusting system parameters on each node
- Checking the VAXcluster alias
- Setting up batch queues for ALL-IN-1 batch jobs
- Creating a clusterwide generic queue with associated execution queues for the background formatter
- Starting and stopping ALL-IN-1 on each node
- Compiling and installing text libraries and form libraries on each node after making changes to text libraries or form libraries

Tuning ALL-IN-1

When ALL-IN-1 is installed, the system parameters are set up for ALL-IN-1 only on the node on which the installation is performed. After installation, before starting ALL-IN-1, check the parameters on the other nodes in the VAXcluster system on which you are going to run ALL-IN-1. Tune each node as for a single node. When considering global buffers, do not allow for all users to be logged in to a single node at any one time—this wastes resources. Instead, divide the number of users between the nodes in the VAXcluster system, allocating more users to larger machines.

Refer to the chapter on tuning ALL-IN-1 in the *ALL-IN-1 Management Guide* for details of setting up system parameters.

Checking the VAXcluster Alias

A VAXcluster alias is required by ALL-IN-1 for sending and receiving mail and for scanning users' calendars. For information about checking the VAXcluster alias, refer to the article entitled "Planning VAXcluster Configurations for Message Router" in this issue of the *ALL-IN-1 Information Update*.

Setting up Batch Queues

A problem in ALL-IN-1 Version 2.3 means that it is not possible to specify a generic batch queue for the ALL-IN-1 housekeeping and account management batch procedures. An article published in the November 1989 issue of *ALL-IN-1 Information Update* and reprinted in this issue describes a workaround for this problem. We suggest that once you have installed ALL-IN-1 Version 2.3 you follow the instructions given in the article. You can then move the ALL-IN-1 batch jobs from the batch queue SYS\$BATCH to clusterwide generic queues with associated execution queues that run on several nodes in the VAXcluster system. This ensures that ALL-IN-1 activities are not delayed by VMS batch jobs.

Setting up queues in this way provides the following advantages:

- Resilience—jobs are directed to whichever node is available
- Load balancing—use of resources is spread across the nodes

If your system has a clusterwide generic queue with execution queues that run on nodes that are not in the common-environment VAXcluster system, do not use that queue. The generic queue used by ALL-IN-1 must only be associated with queues on the nodes in the common environment in which ALL-IN-1 is running.

In a multiple-environment VAXcluster system, it is recommended that for ease of maintenance you use one generic queue for each common environment in which ALL-IN-1 is running.

You can create your own clusterwide generic queue and execution queues, creating an execution queue on each node in the VAXcluster system. After creating the queues, remember to edit the VMS startup procedure to include commands to start the queues. If Message Router is installed on your system, you can use the generic Message Router batch queue, MB\$BATCH, and its associated execution queues. Each MB\$BATCH execution queue, MB\$BATCH_node, is set up when Message Router is started on a node.

The ALL-IN-1 batch jobs that should be submitted to a generic queue are:

- ALL-IN-1 housekeeping procedures

When ALL-IN-1 is installed, the housekeeping procedures run by default on the batch queue SYS\$BATCH.

Refer to the chapter on ALL-IN-1 housekeeping in the *ALL-IN-1 Management Guide* for further details of these procedures.

For information about creating a generic batch queue for the housekeeping procedures, refer to the article entitled "Queues for Housekeeping and Account Management Batch Procedures" in this issue of the *ALL-IN-1 Information Update*.

For details on specifying the queue for the housekeeping procedures, refer to the chapter on defining ALL-IN-1 policies and the chapter on ALL-IN-1 housekeeping in the *ALL-IN-1 Management Guide*.

- Some of the user account management procedures

When ALL-IN-1 is installed, the account management procedures that are performed as batch jobs run by default on the batch queue SYS\$BATCH.

For information about creating a generic batch queue for the account management procedures, refer to the next article.

For details on specifying the queue for the account management procedures, refer to the chapter on defining ALL-IN-1 policies in the *ALL-IN-1 Management Guide*.

- Mail Sender and Fetcher batch jobs

For details on specifying the queue for the Sender and Fetcher, refer to the chapter on managing ALL-IN-1 mail in the *ALL-IN-1 Mail Management Guide*.

When mail areas are created and shared directories are reorganized, ALL-IN-1 must define new system logical names on each node in the VAXcluster system. For ALL-IN-1 to define the new logical names, specify which batch execution queue should be used on each node in the VAXcluster system; only specify queues which are on nodes where ALL-IN-1 is running. Use the Manage node-specific batch queues (MNQ) option on the Manage Mail Areas menu to specify the queues.

For details of managing mail areas, refer to the *ALL-IN-1 Management Guide*.

SYSTEM MANAGEMENT

Some of the housekeeping procedures automatically log users out and shut down ALL-IN-1. If ALL-IN-1 is running on a VAXcluster system, it is shut down on all the machines in the VAXcluster system. Schedule these procedures to run at a time when there will be minimum disruption to users, for example, in the evening and on weekends.

Document Formatting Queue

When a user prints a document, the document is automatically formatted. ASCII and WPS-PLUS documents are usually formatted in the background, so that the user does not have to wait while the formatting is done. Formatter jobs are submitted to the formatter queue OA\$FORMATTER.

The formatter queue is created and started by the formatter startup procedure OA\$BUILD_SHARE:OA\$FORMATTER_START.COM. This procedure is executed when the ALL-IN-1 startup procedure, A1V23START.COM, is invoked. The formatter queue runs on the node on which the formatter startup procedure is first executed.

However, if your system is a VAXcluster system with two or more nodes, it is recommended that you edit the formatter startup procedure to create a clusterwide generic formatter queue with execution queues for several of the nodes in the VAXcluster system. This allows formatting to continue if one of the nodes in the VAXcluster system is unavailable and spreads the formatting load across several nodes. To create a generic queue:

1. Edit the formatter startup command procedure OA\$BUILD_SHARE:OA\$FORMATTER_START.COM to specify a generic queue with associated execution queues.

Instructions for making these modifications are given in the formatter startup command procedure. It is suggested that you create more execution queues than you need, ready to be started if the usual execution queues are not available.

2. Delete the original formatter queue.
3. Execute the formatter startup command procedure.

Refer to the chapter on printing and formatting in the *ALL-IN-1 Management Guide* for further details on printing and formatting.

Starting and Stopping ALL-IN-1

After rebooting the system or upgrading or modifying your system in any way, you must execute the ALL-IN-1 startup command procedure SYS\$MANAGER:A1V23START.COM on each node in the VAXcluster system. For example, if you add a new language or application, execute the startup command procedure. When the startup procedure is executed, the ALL-IN-1 environment is reset and the system configuration is defined. For example, ALL-IN-1 images, text libraries, and form libraries are installed and logical names are defined.

Execute the startup procedure as follows:

```
$ @SYS$MANAGER:A1V23START device_name:[directory]
```

where:

device_name and *directory* define the location of the configuration data file, A1CONFIG.DAT. If you do not specify the location of this file, you are prompted for it. For an installation using default locations on the system disk, the location is:

```
SYS$SYSDEVICE:[ALLIN1.DATA_SHARE]
```

In certain cases, it is not necessary to execute the startup procedure after changes have been made. You can, if you wish, implement the changes using the appropriate DCL commands and ALL-IN-1 functions. For example, after relinking ALL-IN-1 and moving the image files to the correct directories, install all the image files on each node. You can do this either by executing A1V23START.COM or as follows:

```
$ RUN SYS$SYSTEM:SYSMAN
SYSMAN> SET ENVIRONMENT/NODE=(node_name, ...)
SYSMAN> DO INSTALL REPLACE filename.EXE
```

For details of the System Management Utility (SYSMAN), refer to the VMS SYSMAN documentation.

Use the Shutdown ALL-IN-1 (SDA) option to shut down ALL-IN-1 on each node in the VAXcluster system.

After ALL-IN-1 has been shut down and if no changes have been made to the system, use the Restart ALL-IN-1 (RSA) option on the ALL-IN-1 Management menu. This restarts ALL-IN-1 on each node in a VAXcluster system.

Reinstalling a Text or Form Library

After you have modified a text or form library, we recommend that you compile and install the text or form library; the library is only installed on the node where you performed the operation. Then install the library on each node. You can, if you wish, execute the ALL-IN-1 startup procedure, A1V23START.COM, on each node or you can install the new library as follows:

1. To install a text library, create the following command procedure:

```
$ ALLIN1/NOINITIALIZE/LANGUAGE=language
OA$TXL_REMOVE OA$LIB:CM
OA$TXL_INSTALL OA$LIB:CM
```

where:

language is the name of the language in which you want to run ALL-IN-1 (to install a library for a language, install the library while running ALL-IN-1 in that language).

To install a form library, create the following command procedure:

```
$ ALLIN1/NOINITIALIZE/LANGUAGE=language
OA$FBT_REMOVE_LIB form_library
OA$FBT_INSTALL_LIB form_library
```

SYSTEM MANAGEMENT

2. Execute the command procedure on each node in the VAXcluster system as follows:

```
$ RUN SYS$SYSTEM:SYSMAN
SYSMAN> SET ENVIRONMENT/NODE=(node_name, ...)
SYSMAN> DO @command_procedure.COM
```

where:

command_procedure.COM is the name of the command procedure that you created.

For further information on VAXcluster systems, see the VMS VAXcluster documentation.

Queues for Housekeeping and Account Management Batch Procedures

This article describes how to create a generic batch queue for the ALL-IN-1 housekeeping and account management batch procedures.

In ALL-IN-1 Version 2.3, the batch queue ALL-IN-1 uses for the housekeeping procedures is the batch queue you specify using the Define policies for housekeeping procedures (DPH) option; you specify the queue in the Batch queue for housekeeping procedures field.

The batch queue ALL-IN-1 uses for the account management procedures is the batch queue you specify using the Define policies for account security (DPS) option; you specify the queue in the Batch queue for manage user accounts field.

It is not possible to specify a generic batch queue in these fields.

ALL-IN-1 creates the queues as follows:

- The DPH and DPS options run the command procedure OA\$LIB:QUEUE_LIST.COM.
- OA\$LIB:QUEUE_LIST.COM executes the image file QUEUE_EDIT.EXE
- QUEUE_EDIT.EXE produces a file that lists all the system batch queues, excluding generic queues and queues that have no attributes, for example, queues that are "Stopped."

To use generic queues, replace OA\$LIB:QUEUE_LIST.COM with the following command procedure:

```

Replacement for OA$LIB:QUEUE_LIST.COM

$!+
$!      List batch queues on system for use by ALL-IN-1
$!-
$ SHOW QUEUE/BATCH/OUT=QUEUE.TMP
$!
$!      Create temporary EDT command file
$!
$ CREATE EDIT_QUEUE_LIST.TMP
SUBSTITUTE/GENERIC BATCH/Batch/WHOLE/NOTYPE
CHANGE ;100("BATCH"ELI, ^Z)EXT EXIT
$!
$!      Edit queue.tmp
$!
$ ASSIGN/USER NL: SYS$OUTPUT
$ EDIT/EDT/COMMAND=EDIT_QUEUE_LIST.TMP QUEUE.TMP
$!
$!      Run edit program to produce new version of entry form file
$!
$ RUN OA$LIB:QUEUE_EDIT.EXE
$!
$!      Delete temp file created by VMS
$!
$ DELETE/NOCONFIRM QUEUE.TMP;*,EDIT_QUEUE_LIST.TMP;*
$ EXIT

```

In the command procedure, the ^Z in the EDT CHANGE command is the single character CTRL/Z; it is not UP-ARROW followed by the Z character. To enter the ^Z character using the EDT text editor, do the following:

1. Press the GOLD (PF1) key.
2. Press 2, then 6 on the main keyboard.

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- 3. Press the GOLD (PF1) key.**
- 4. Press Keypad 3.**

If you do not use the EDT text editor to create the command procedure, refer to the manual for your text editor for information on how to enter control sequences.

Planning VAXcluster Configurations for Message Router

This article describes some of the recommended configurations for using ALL-IN-1 and Message Router in a VAXcluster system.

To use the Directory Service (and therefore the Mail directory), Message Router must be installed on the same node as ALL-IN-1 or the same VAXcluster system if the node is part of a VAXcluster system. The VAXcluster configurations in which Message Router and the Directory Service can be used are:

- Single node

This is the default environment.

- Common-environment VAXcluster system

A common-environment VAXcluster system (previously known as a homogeneous VAXcluster system) is a VAXcluster system where all nodes are part of the VAXcluster alias and use a single system disk. This is the default VAXcluster configuration.

To check whether the VAXcluster alias is defined for all the nodes, on each node, enter:

```
$ SHOW LOGICAL SYS$CLUSTER_NODE
```

If the VAXcluster alias is not defined on a node, define it by entering the following commands on that node:

```
$ RUN SYS$SYSTEM:NCP
NCP> SET EXECUTOR ALIAS NODE nodename
NCP> EXIT
```

- Multiple-environment VAXcluster system

A multiple-environment VAXcluster system (previously known as a heterogeneous VAXcluster system) is a VAXcluster system with multiple system disks. In this type of VAXcluster system, Message Router must be installed on each system disk in the VAXcluster system. In addition, at least one disk must be shared between all VAXcluster members, so that the Directory Service databases can be installed on that disk.

The VAXcluster alias must be defined for all nodes using the Directory Service. See the instructions on a common-environment VAXcluster system for how to ensure that the alias is defined.

Running a VAXcluster system in this configuration takes more management, because, for example, you must ensure that the individual nodes are upgraded in a compatible manner.

You can use this VAXcluster configuration for Message Router Version 3.1 only. If you use Message Router Version 3.0, you need to upgrade to Version 3.1.

- VAXcluster system with Message Router running centrally

You can configure a VAXcluster system so that ALL-IN-1 runs on all nodes in the system, and yet most of Message Router runs on the larger nodes only. In particular, the Message Router Transfer Service and Directory Service run on the larger nodes only, and yet users on all nodes can send and receive mail and access the Mail directory.

In this VAXcluster configuration, the Transfer Service and Directory Service run on only those nodes that respond to the VAXcluster alias. The nodes that do not respond to the alias still appear to be part of the VAXcluster system when making outgoing connections, such as when sending mail to remote nodes, but they do not respond to incoming connections. Preventing these incoming connections prevents the Transfer Service and Directory Service from being started automatically on those nodes.

SYSTEM MANAGEMENT

This configuration has many advantages for VAXcluster systems that include some large processors and some smaller ones, such as MicroVAX systems and workstations.

- The smaller nodes are not loaded with MAILbus processes, such as the Directory Service servers and listeners.
- The smaller nodes are not affected by variations in workload on the main nodes. The workload on the smaller nodes remains broadly static.
- Running ALL-IN-1 on the smaller nodes means that the terminal input/output (I/O) occurs on those nodes, relieving the main nodes of the I/O.
- The VAXcluster system can grow in small stages by adding more MicroVAX systems and workstations that do not run the MAILbus processes. Only when the main nodes reach capacity do you need to add another main node.

As with all multiple-environment VAXcluster systems, Message Router must be installed on each system disk and the Directory Service must be installed on a shared disk. In addition, modify the startup files on each node so that the Directory Service is started only on the nodes that respond to the alias, and not on the other nodes. To do this:

1. Ensure the VAXcluster alias is defined for all nodes by following the instructions given on common-environment VAXcluster systems.
2. Prevent the relevant nodes from responding to the VAXcluster alias by entering the following commands on each of those nodes:

```
$ RUN SYS$SYSTEM:NCP
NCP> SET EXECUTOR ALIAS INCOMING DISABLED
NCP> DEFINE EXECUTOR ALIAS INCOMING DISABLED
NCP> EXIT
```

3. On the nodes that respond to the alias, start the Message Router Management Service, Transfer Service, and Directory Service by entering:

```
$ @SYS$MANAGER:MB$CONTROL START=(MS,TS,DDS)
```

4. On the nodes that do not respond to the alias, start the Management Service only by entering:

```
$ @SYS$MANAGER:MB$CONTROL START=(MS)
```

5. On the nodes that do not respond to the alias, prevent the MB\$BATCH queue being used for maintenance jobs, such as MR\$TIDY, by entering:

```
$ STOP /QUEUE /NEXT MB$BATCH_ 'F$GETSYI( "SCSNODE")'
```

6. On the nodes that do not respond to the alias, define the logical name MR\$NODE by adding the following lines to the site startup procedure, A1V23_SITE_START.COM, which is held in OA\$SITE_BUILD_SHARE:

```
$ IF F$TRNLNM( "MR$NODE") .EQS. "" THEN -
  _$DEFINE/SYSTEM MR$NODE 'F$TRNLNM( "SYS$CLUSTER_NODE")'""22=""
```

Do this so that users can send remote mail. The logical name is automatically defined for the nodes that respond to the alias because the Transfer Service is started on those nodes.

7. Start ALL-IN-1 as described in the *ALL-IN-1 Management Guide* in the chapter on ALL-IN-1 management tasks. Note that you can use the standard configuration data file A1CONFIG.DAT.

To set up other VAXcluster configurations, contact your Digital support center.

Using the NEWDIR Function

This article describes a problem with the ALL-IN-1 NEWDIR function and suggests several solutions to the problem.

The ALL-IN-1 NEWDIR function sets a user's default File Cabinet and ALL-IN-1 directory to those of another user. This function was designed primarily for interactive use by privileged users, to allow them to switch context to another user's File Cabinet.

The problem occurs when you use NEWDIR to switch context. Your original context is not completely closed down, and some system resources remain allocated. In particular, global sections used for global buffers on Record Management Services (RMS) files may not be deassigned. The problem is not caused by the NEWDIR function itself, but by the combination of NEWDIR and a CABINET subfunction. Other uses of NEWDIR do not experience problems with mapping global buffers. Each user should, therefore, restrict the use of NEWDIR to one or two times in any ALL-IN-1 session.

The rest of this article discusses what happens when NEWDIR is used in a loop to scan large numbers of users in an automated procedure.

ALL-IN-1 Version 2.2

In ALL-IN-1 Version 2.2, problems may occur in the script SMJANITOR.SCP when it uses the NEWDIR function and CABINET subfunctions together. This script is the ALL-IN-1 janitor and uses NEWDIR and the CABINET subfunctions to process each user in turn. The janitor contains checks to ensure that NEWDIR has worked (by checking that the default directory has changed) and to skip that user if it has not worked.

ALL-IN-1 Version 2.3

In ALL-IN-1 Version 2.3, problems may occur in the following scripts since they use the NEWDIR function and CABINET subfunctions together:

- ARCHIVE_SYS_USER_FOLDERS.SCP, which archives documents for those users who have marked documents for archiving
- SMREORG_JAN.SCP, which empties users' Wastebasket folders (this script replaces the ALL-IN-1 Version 2.2 janitor)
- SMREORG_P.SCP, which reorganizes users' File Cabinet files

All these scripts check OA\$STATUS to ensure that NEWDIR operates correctly and to skip the offending user if NEWDIR fails. In addition, the script ARCHIVE_SYS_USER_FOLDERS.SCP picks up the offending user in the next run of the archiving.

Solutions

There are several ways to work around the NEWDIR problem for uncustomized ALL-IN-1 Version 2.2 and Version 2.3 systems.

- Modify the script causing the problem so that it sets global buffers to 0 on the file

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OA\$DATA:PENDING.DAT and the shared document attribute files (SDAFs) in use. The SDAFs are:

- OA\$DATA:DAF.DAT in ALL-IN-1 Version 2.2
- OA\$SHARy:OA\$DAF_y.DAT in ALL-IN-1 Version 2.3, where y is a letter from A to E that represents the mail area

When the script has finished, restore the global buffers on these files to their original values

This solution assumes that ALL-IN-1 is shut down when the janitor or Empty Wastebaskets housekeeping procedure runs, even though ALL-IN-1 Version 2.3 does not require you to do so.

- Write a program that opens PENDING.DAT and the SDAFs in use and then hibernates. Modify the script causing the problem so that it runs this program in a VMS subprocess and deletes the subprocess when the script has finished processing the last user.
- If the problem is with the janitor or the Empty Wastebaskets housekeeping procedure, modify the script so that if NEWDIR fails, the script waits for say 30 seconds and then tries again. If NEWDIR fails say ten times in a row, abort the script.
- If the problem is caused by the Empty Wastebaskets housekeeping procedure, create a dummy user for each SDAF in use. Before running the script, log these users in to ALL-IN-1. Ensure that their File Cabinets are open by, for example, reading a document or using the CABINET OPEN function. These users are then skipped by the script.

For further information about the NEWDIR function, refer to the appropriate section in the *ALL-IN-1 Application Programming: Reference Volume 2*.

APPLICATION PROGRAMMING

DATE_CONVERT Function

Introduction

DATE_CONVERT is an ALL-IN-1 function that converts a date from one format to another and stores the converted date in an ALL-IN-1 symbol. Using the function requires careful validation to ensure that it is always successful. This article describes the conditions under which DATE_CONVERT may fail and how to avoid the failure.

Syntax

The DATE_CONVERT syntax is:

```
DATE_CONVERT dest-sym, source-sym, format-key
```

The date to be converted is *source-sym*. It can take the form of any ALL-IN-1 symbol or literal string.

The converted date is stored in *dest-sym*, which must be an ALL-IN-1 symbol or a field on the current form.

The desired format of *dest-sym* is identified by *format-key*, a numeral from 1 to 14. *ALL-IN-1 Application Programming: Reference Volume 2* contains a table giving the formats for each numeral.

Problem

Before it converts the date, the DATE_CONVERT function checks that the date in *source-sym* is valid. A problem occurs if the date is not valid, because the function returns a blank *dest-sym*. Because DATE_CONVERT does not set OA\$STATUS, it is not obvious that the routine has failed unless you check for a blank *dest-sym*.

When performing the validations, DATE_CONVERT checks that the date it has received is in the preferred date format that the user specified on the Set Working Conditions form. If the date does not match the user's preferred date format, DATE_CONVERT can fail, returning a blank *dest-sym*.

For example, if you have developed an application that passes the source date to the DATE_CONVERT function in the form DD/MM/YY and the user's preferred format is MM/DD/YY, the date might be invalid. If the date is September 25, 1990, the date will be passed to DATE_CONVERT in the form 25/09/90, but validation will fail because, read in accordance with the user's preferred format, it appears to be the ninth day of the twenty-fifth month.

Workaround

You can avoid this problem if you validate dates before they are passed to DATE_CONVERT, using the DSAB, CAL\$CHECK_DATE. Perform date validation on a form field using the following code:

```
;;DATE_FLD;;  
/VALID=CAL$CHECK_DATE:"DATE_FLD"
```

CAL\$CHECK_DATE references the user's preferred date format. If the date does not match the preferred format, the user cannot leave the field before entering a valid date.

OA\$TXL_SEARCH_ORDER and OA\$TXL_SEARCH_LAST

When you call a DO script, SCRIPT script, or template without specifying the directory that contains it, ALL-IN-1 usually looks for it first in a text library (TXL). Up to and including ALL-IN-1 Version 2.2, you could modify this default behavior by altering the value of the symbol OA\$TXL_SEARCH_LAST. If OA\$TXL_SEARCH_LAST had a value of 1, ALL-IN-1 checked the directories specified in the symbol OA\$FILE_SEARCH_ORDER before checking the ALL-IN-1 TXL (A1TXL.TXL). If OA\$TXL_SEARCH_LAST had a value of 0, ALL-IN-1 used the default search order and checked the TXL first.

ALL-IN-1 Version 2.3 introduced a second text library, CMTXL.TXL, that contains customized elements (this TXL is known as the site text library). Version 2.3 also introduced a new symbol called OA\$TXL_SEARCH_ORDER, which supersedes the symbol OA\$TXL_SEARCH_LAST.

OA\$TXL_SEARCH_ORDER takes a numeric value from 0 to 3, which indicates the order in which ALL-IN-1 searches for scripts and templates. The meanings of the different numeric values are shown in Table 1.

Table 1: OA\$TXL_SEARCH_ORDER Values

Value	Search Order
0	CMTXL.TXL, A1TXL.TXL, OA\$FILE_SEARCH_ORDER
1	OA\$FILE_SEARCH_ORDER, CMTXL.TXL, A1TXL.TXL
2	A1TXL.TXL, OA\$FILE_SEARCH_ORDER
3	OA\$FILE_SEARCH_ORDER, A1TXL.TXL

OA\$TXL_SEARCH_LAST is no longer documented, and you should always use OA\$TXL_SEARCH_ORDER in new applications. However, OA\$TXL_SEARCH_LAST still exists and may be set by old applications. Therefore, it is important to understand how the search order is affected by setting these two symbols.

As you would expect, if OA\$TXL_SEARCH_LAST has a value of 0, ALL-IN-1 searches for elements in the order specified by the numeric value of OA\$TXL_SEARCH_ORDER. If you set OA\$TXL_SEARCH_LAST to 1, it alters the search order of OA\$TXL_SEARCH_ORDER as shown in Table 2.

Table 2: OA\$TXL_SEARCH_ORDER when OA\$TXL_SEARCH_LAST is 1

Value	Search Order
0	OA\$FILE_SEARCH_ORDER, CMTXL.TXL, A1TXL.TXL
1	OA\$FILE_SEARCH_ORDER, CMTXL.TXL, A1TXL.TXL
2	OA\$FILE_SEARCH_ORDER, A1TXL.TXL
3	OA\$FILE_SEARCH_ORDER, A1TXL.TXL

Notice that the value of OA\$TXL_SEARCH_LAST only affects OA\$TXL_SEARCH_ORDER if OA\$TXL_SEARCH_ORDER is 0 or 2.

Modify Search Order Option

The Modify search order (MS) option, which is available from the Customization Management subsystem, modifies the values of `OA$TXL_SEARCH_ORDER` and `OA$FILE_SEARCH_ORDER`. This is useful, for example, when modifying a script in the TXL, since it lets you test the modified version without having to move it into the site text library. However, the highlighted current order shown on the Customization Management menu is not always correct, since it is hard coded, and does not reflect the actual values of the symbols `OA$TXL_SEARCH_ORDER` and `OA$FILE_SEARCH_ORDER`.

The following list gives the correct search order for each of the options, assuming that `OA$FILE_SEARCH_ORDER` is set to `[],OA$LIB`, which is the usual value:

- **Default search order (DFT)**
Sets `OA$TXL_SEARCH_ORDER` to 0. The search order for elements is:
`CMTXL.TXL, A1TXL.TXL, [], OA$LIB`
- **Development first (DVF)**
Sets `OA$TXL_SEARCH_ORDER` to 1 and appends `OA$SITE_DEV:` to the front of `OA$FILE_SEARCH_ORDER`. The search order for elements is:
`OA$SITE_DEV:, [], OA$LIB, CMTXL.TXL, A1TXL.TXL`
- **Digital elements only (DEO)**
Sets `OA$TXL_SEARCH_ORDER` to 2. The search order for elements is:
`A1TXL.TXL, [], OA$LIB`
- **User elements first (UEF)**
Sets `OA$TXL_SEARCH_ORDER` to 3. The search order for elements is:
`[], OA$LIB, A1TXL.TXL`
- **Change file search order (CFS)**
Sets `OA$TXL_SEARCH_ORDER` to 0 and modifies `OA$FILE_SEARCH_ORDER` to contain the value you specify as the search order.

If you want to specify a search order that does not include `OA$LIB`, modify the form `CM$MS`, which is called by the Modify search order option. `CM$MS` contains the prefunction `DO CM_AUTHORIZE`, but the `DO` script `CM_AUTHORIZE` is in `OA$LIB`, not in the TXL. If your search order does not include `OA$LIB`, use Customization Management to customize the form `CM$MS`, changing the prefunction to `DO OA$LIB:CM_AUTHORIZE`.

If you modify the values of `OA$TXL_SEARCH_ORDER` or `OA$FILE_SEARCH_ORDER`, then, of course, they supersede the values set on the Customization Management menu.

Index

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