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VSI OpenVMS

DECosap/AP and DECosap/H1 Installation Guide

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This guide contains instructions for installing DECosap/AP and DECosap/H1 on a Digital UNIX (Alpha AXP architecture) system.

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DECosap/AP and DECosap/H1 Installation Guide

VMS Software

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Preface

Purpose of this Guide

This guide describes how to install the DECosap/AP and DECosap/H1 software for Digital UNIX. The installation procedure creates DECosap/AP and DECosap/H1 for Digital UNIX file systems subordinate to the /usr/opt and /usr/var /opt directories and loads DECosap/AP and DECosap/H1 for Digital UNIX software subsets.

1. Intended Audience

This manual is intended for system managers responsible for installing DECosap/AP and DECosap/H1 on Digital UNIX. You must be familiar with the Digital UNIX installation procedure.

2. Document Structure

This manual is organized as follows:

Chapter 1 describes the operating system and hardware requirements for installation and related procedures that you must complete before installing DECosap/AP and DECosap/H1 for Digital UNIX.

Chapter 2 describes the DECosap/AP and DECosap/H1 for Digital UNIX installation procedure.

Chapter 3 describes the Installation Verification Procedure (IVP) and any post-installation that you must complete in order to use DECosap/AP and DECosap/H1 for Digital UNIX.

Appendix A describes the hierarchy and contents of the DECosap/AP and DECosap/H1 for Digital UNIX directories.

Appendix B contains sample listings for a DECosap/AP and DECosap/H1 for Digital UNIX installation.

3. DECosap/AP and DECosap/H1 Documentation Set

The DECosap/AP and DECosap/H1 Version 3.0 documentation set also includes the following manual:

DECosap for Digital UNIX Network Manager's and Programmer's Guide

4. Conventions

The conventions found in the following table are used in this document.

Convention	Meaning
DECosap/AP DECosap/AP /H1	The term " DECosap/AP and DECosap/H1" refers to the DECosap/AP and DECosap/H1 product or to functions and services provided by the DECosap/AP and DECosap/H1 software.
Digital UNIX	The term " Digital UNIX" refers to the Digital UNIX product or to operations and functions performed by the Digital UNIX operating system.

Convention	Meaning
#	The Digital UNIX superuser prompt.
NODE>	The Digital UNIX user prompt is the node name with a right angle bracket (>).
//	Slashes are part of the directory specification /directory_name/ on Digital UNIX systems.
UPPERCASE, lowercase	The Digital UNIX system differentiates between uppercase and lowercase characters. Literal strings that appear in descriptions, examples, or command syntax must be entered exactly as shown.
Boldface type	Boldface type emphasizes user input to system prompts.
system output	This typeface indicates system output in interactive examples.
Ctrl/x	Hold down the **Ctrl** key while you press another key, indicated here by **x**.
italic type	Italic type emphasizes important information and indicates the complete titles of documents.
n	A lowercase italic n indicates the generic use of a number.
x	A lowercase italic x indicates the generic use of a letter.
argument, . . .	Indicates that multiple arguments can be used in a command string if separated by commas.
⋮	Vertical ellipses (dots) in examples represent data that has been omitted for clarity.

Chapter 1. Preparing for DECosap/AP and DECosap/H1 Installation

Before starting the installation procedures in Chapter 2, you should complete the preparation requirements outlined in this chapter. This chapter provides the necessary information to make your installation run smoothly.

1.1. Release Notes

Your documentation includes the DECosap/AP and DECosap /H1 for Digital UNIX Release Notes, which you should read before installing and using the product. The release notes may contain information about changes to the application.

After you install the DECosap/AP and DECosap/H1 for Digital UNIX software, you can also access the online release notes in the form of an ASCII text file by entering either of the following commands:

```
#  more /usr/opt/osh1_300/doc/relnotes.txt

#  more /usr/opt/osap_300/doc/relnotes.txt
```

Postscript versions of the document are also provided in the following directories:

- /usr/opt/osh1_300/doc/relnotes.ps
- /usr/opt/osap_300/doc/relnotes.ps

1.2. License Registration

DECosap/AP and DECosap/H1 for Digital UNIX includes support for the Digital UNIX License Management Facility (LMF). A License Product Authorization Key (License PAK) must be registered in the License Database (LDB) in order to use DECosap/AP and DECosap/H1 for Digital UNIX on a newly- licensed node. The License PAK may be shipped along with the kit if you ordered the license and media together; otherwise, it is shipped separately to a location based on your license order. If you are installing DECosap/AP and DECosap/H1 for Digital UNIX as an update on a node already licensed for this software, you have already completed the License PAK registration requirements.

If you are installing prerequisite or optional software along with DECosap/AP and DECosap/H1 for Digital UNIX, review the PAK status and install the PAKs for any prerequisite or optional software before you install DECosap/AP and DECosap/H1 for Digital UNIX.

To register a license under the Digital UNIX system, first log in as superuser. You then have a choice of two ways to perform the PAK registration in the License Database (LDB):

- Before installing DECosap/AP and DECosap/H1 for Digital UNIX

  At the superuser prompt, edit an empty PAK template with the lmf register command and include all the information on your License PAK as follows:

  ```
  #  lmf register
  ```

- After installing DECosap/AP and DECosap/H1

At the superuser prompt, edit the partially completed PAK template in /usr/var/adm/lmf/template with the lmf register command to add your unique License PAK information as follows:

```
#  lmf register - < /usr/var/adm/lmf/template
```

template is the LMF product name on the License PAK, as follows:

- DECOSAP-AP
- DECOSAP-AP-USER
- DECOSAP-H1
- DECOSAP-H1-USER

After you register your license, use the following lmf reset command to copy the license details from the License Database (LDB) to the kernel cache:

```
#  lmf reset
```

1.3. Checking the Media Software Distribution Kit

Use the Bill of Materials (BOM) to check the contents of your DECosap/AP and DECosap/H1 for Digital UNIX software distribution kit.

The kit includes this installation guide and the CDROM optical disk for Alpha systems with RRD40 optical disk drives.

Your distribution kit may also include a letter titled DECosap/AP and DECosap/H1 for Digital UNIX Release Notes Addendum or Read Before Installing DECosap/AP and DECosap /H1. This letter provides information that is important for you to know before installing the product and may not be included in this installation guide or release notes. If you have this letter, please read it now.

1.4. Installation Procedure Requirements

Installing DECosap/AP and DECosap/H1 and running the Installation Verification Procedure (IVP) on your Digital UNIX system takes approximately 5 to 10 minutes.

1.4.1. Checking Login Privileges

You must be able to log in as superuser on the system where you are installing DECosap/AP and DECosap/H1 Digital UNIX. Only when you are logged in as superuser do you have sufficient privileges to install the DECosap/AP and DECosap /H1 software.

1.4.2. Hardware Requirements

To perform the installation, you require a minimum hardware configuration as spelled out in your Software Product Description (SPD).

You need at least the following hardware items:

- A supported Alpha AXP processor (see the DECosap/AP and DECosap/H1 for Digital UNIX SPD for details)
- A terminal
- A supported network communications device (see the DECosap/AP and DECosap/H1 for Digital UNIX SPD for details)
- Sufficient free disk space as described in Section 1.4.6

Check the SPD to see if there are further hardware requirements that apply to your particular application.

1.4.3. Software Requirements

DECosap/AP and DECosap/H1 Version 3.0 requires the Digital UNIX operating system Version 3.2 or higher. Future DECosap /AP and DECosap/H1 releases for Digital UNIX may require higher versions of the operating system, as described in the online release notes or the Read Before Installing or Using Letter.

Table 1.1 provides information on the software you must have installed on your system before installing DECosap/AP and DECosap/H1 for Digital UNIX. The table also includes information about optional software that you can use together with DECosap/AP and DECosap/H1 for Digital UNIX. The System Support Addendum (SSA) contains a complete list of prerequisite and optional software and their required version numbers.

Table 1.1. Prerequisite Software

Software Products	Purpose
Digital UNIX Version 3.2	Operating system services
DECnet/OSI for Digital UNIX Version 3.1	OSI Network Services
DEComni API Version_3.0	Application Programming Interface

DECosap/AP and DECosap/H1 for Digital UNIX requires the following subsets, from the software products listed in Table 1.2, to be loaded on the system where you will install it:

Table 1.2. Required Subsets

Subset Name	Comment
OSFBASE320	Always required
OSFPGMR320	Always required
OSFDCMT320	Required only to install the online reference pages
DNABASE320	Always required
DOUBASE300	Always required

To check whether the subsets are loaded, do the following:

1. Log in to the system where you will install DECosap/AP and DECosap/H1.
2. Enter the following commands:

```
#  /usr/sbin/setld -i | grep OSFBASE320
```

```
#  /usr/sbin/setld -i | grep OSFPGMR320
#  /usr/sbin/setld -i | grep OSFDCMT320
#  /usr/sbin/setld -i | grep DNABASE320
#  /usr/sbin/setld -i | grep DOUBASE300
```

Check the displayed rows for the name of the relevant subset and any patches. The word "installed" appears in a row after the subset identifier when a subset is loaded. If the word "installed" does not appear (the second column in a row is blank), the subset or patch is not loaded. In this case, you must load the missing Digital UNIX software before installing DECosap/AP and DECosap/H1.

1.4.4. Configuring DECnet for DECosap/AP and DECosap/H1 Digital UNIX

Before you can use DECosap/AP and DECosap/H1 for Digital UNIX with an external device, you must:

- Configure a routing circuit for NULL-INTERNET.
- Specify the same inactive area address as that for the routing circuit.

If you run the DECosap/AP and DECosap/H1 Digital UNIX installation procedure but the NULL-INTERNET address is not configured, a warning message is displayed (see).

1.4.5. Determining Which Subsets to Load

You must choose the DECosap/AP and DECosap/H1 for Digital UNIX subsets you want to load.

The DECosap/AP and DECosap/H1 for Digital UNIX subsets have the following titles:

- DECosap/AP Omni Services for SINEC AP

  This provides a software environment for the development of Digital UNIX applications that access and handle SINEC-AP devices, using the facilities of the DEComni high-level application programming interface.

  The subset name is SAPINT300.

- DECosap/AP Manual Pages

  This provides the online manual pages for the DECosap SINEC-AP extensions to the DEComni API.

  The subset name is SAPMAN300.

- DECosap/H1 Omni Services for SINEC H1

  This provides a software environment for the development of Digital UNIX applications that access and handle SINEC-H1 devices, using the facilities of the DEComni high-level application programming interface.

  The subset name is SH1INT300.

- DECosap/H1 Manual Pages

  This provides the online manual pages for the DECosap SINEC-H1 extensions to the DEComni API.

  The subset name is SH1MAN300.

1.4.6. Determining Disk Space Requirements

Table 1.3 and Table 1.4 list the disk space requirements for loading DECosap/AP and DECosap/H1 for Digital UNIX software subsets. They specify disk space requirements by file system for the convenience of those doing installations on systems where these file systems are mount points for different disk partitions.

Table 1.3. Worksheet for Disk Space Requirements (Kilobytes) During the Installation

Subset Title	**Subset Name**	**/**	**/usr** **/opt**	**/usr** **/var** **/opt**
DECosap/AP Omni Services for SINEC AP	SAPINT300	5,100	22,800	40,000
DECosap/AP Manual Pages	SAPMAN300	0	200	300
DECosap/H1 Omni Services for SINEC H1	SH1INT300	5,200	16,000	40,000
DECosap/H1 Manual Pages	SH1MAN300	0	200	300
Totals:		(10,300)	(39,200)	(80,600)[1]

[1]If you are installing all the subsets in one operation, the disk space occupation becomes 50,000 Kilobytes.

Table 1.4. Worksheet for Disk Space Requirements (Kilobytes) for Permanent Use

Subset Title	**Subset Name**	**/**	**/usr** **/opt**	**/usr** **/var** **/opt**
DECosap/AP Omni Services for SINEC AP	SAPINT300	0	10,000	1,200
DECosap/AP Manual Pages	SAPMAN300	0	200	10
DECosap/H1 Omni Services for SINEC H1	SH1INT300	0	10,000	1,200
DECosap/H1 Manual Pages	SH1MAN300	0	200	10
Totals:		(0)	(20,400)	(2,420)

Using these tables, total the values for the subsets that you plan to load in each system.

Compare the space required for subsets with the free space currently on the disks where DECosap/AP and DECosap/H1 for Digital UNIX files will reside.

To determine the current amount of free space for a directory path, log in to the system where you plan to install DECosap/AP and DECosap/H1 for Digital UNIX.

You can check which file systems are mounted and where they are by displaying the file /etc/fstab. For example:

```
#  more /etc/fstab
          /dev/rd0a:/:rw:1:1:ufs::
```

```
/dev/rd0g:/usr:rw:1:2:ufs::
/usr/staff/r1/leslie@bigsys:/usr/staff/r1/leslie:rw:0:0:nfs:bg:
/usr/man@bigsys:/usr/man:ro:0:0:nfs:bg:
```

The display indicates that /usr (mounted to /dev/rd0g) is the only mount point that affects where DECosap/AP and DECosap/H1 for Digital UNIX files will reside. The system has only one local disk drive and the /usr/opt and /usr/var /opt file systems reside in the g partition of the disk on that drive.

Enter the df command to determine total space and free space for the one or two file systems where DECosap/AP and DECosap/H1 files will reside. Given the previous display of the /etc/fstab file, which shows that only /usr is a mount point, you need to check free space only in the /usr file system, as follows:

```
#  df -k /usr
          Filesystem   Total    kbytes   kbytes   %
          node         kbytes   used     free     used  Mounted on
          /dev/rd0g     122598   54447   75892    49%   /usr
```

This display indicates that there are 75892Kb free. This free space must accommodate subset requirements listed in Table 1.3 for both the /usr/opt and /usr/var/opt file systems.

On systems where /usr/var/opt and /usr/opt are mounted to different devices from /usr, enter the following command:

```
 # df -k /usr/opt /usr/var/opt
```

In this case, you compare space required for DECosap/AP and DECosap/H1 files in /usr/opt to the free space displayed in the first line of the df output list, and you compare the space required for DECosap/AP and DECosap/H1 for Digital UNIX files in /usr/var/opt to the free space displayed in the second line of that list.

1.4.7. Increasing Disk Space Available for DECosap/AP and DECosap/H1 for Digital UNIX Installation

The DECosap/AP and DECosap/H1 for Digital UNIX installation procedure creates the following directories and loads files into subordinate directories:

- If you load SAPINT300:

  ```
  /usr/opt/osap_300
  /usr/var/opt/osap_300
  ```

- If you load SAPMAN300:

  ```
  /usr/opt/osh1_300
  /usr/var/opt/osh1_300
  ```

If the osap_300 (or osh1_300) directory node in the previous paths does not exist, the installation procedure creates it. If the osap_300 (or osh1_300) node in the previous paths does exist, the installation procedure uses it. If you find that there is insufficient disk space for the DECosap/AP and DECosap/H1 for Digital UNIX subsets, and know that you have additional space on alternative disks or disk partitions for your system, perform the following steps before installing DECosap/AP and DECosap /H1 for Digital UNIX:

1. Log in as superuser.

2. Create the directory:
   - /usr/opt/osap_300, /usr/var/opt/osap_300, or both, if you are installing SAPINT300
   - /usr/opt/osh1_300, /usr/var/opt/osh1_300, or both, if you are installing SAPMAN300
3. Specify in the /etc/fstab file that one or more of the newly created directories are mount points to new disk partitions where there is additional space.
4. Enter the mount -a command so that the new mount points take effect.

1.5. Backing Up Your System Disk

Digital recommends that you back up your system disk before installing any software. For details of how to perform a system disk backup, see your Digital UNIX documentation.

1.6. Stopping the Installation

You can stop the installation procedure any time by using <Ctrl>/<C>. However, files created up to this point are not deleted automatically. You must delete these files interactively. Appendix A lists the files and directories created during the installation procedure.

1.7. Error Recovery

If errors occur during the installation, the system displays failure messages. If the installation fails due to insufficient disk space, the following message appears:

```
There is not enough file system space for subset
       SAPINT300
DECosap/AP Omni Services for SINEC AP (SAPINT300) will not be loaded.
```

or:

```
There is not enough file system space for subset
       SAPMAN300
DECosap/AP Manual Pages (SAPMAN300) will not be loaded.
```

Errors can occur during the installation if any of the following conditions exist:

- The operating system version is incorrect
- The prerequisite software version is incorrect
- The system parameter values for successful installation are insufficient

For descriptions of error messages generated by these conditions, see the Digital UNIX documentation on system messages, recovery procedures, and Digital UNIX software installation. For information on system software requirements, see Section 1.4.3.

If an error occurs while using DECosap/AP and DECosap/H1 and you believe the error is caused by a problem with the product, take one of the following actions:

- If you have a basic or DECsupport Software Agreement, call your Customer Support Center (CSC). The CSC provides telephone support for high-level advisory and remedial assistance.

- If you have a Self-Maintenance Software Agreement, you can submit a Software Performance Report (SPR).
- If you purchased DECosap/AP and DECosap/H1 within the last 90 days and you think the problem is caused by a software error, you can submit an SPR.

If you find an error in the DECosap/AP and DECosap/H1 documentation, fill out and submit one of the Reader's Comments forms at the back of the document containing the error. Include the section and page number where the error occurred.

When you submit an SPR, please take the following steps:

1. Describe as accurately as possible the circumstances and state of the system when the problem occurred. Include the description and version number of the DECosap/AP and DECosap/H1 product that you are using. Demonstrate the problem with specific examples.
2. Reduce the problem to as small a size as possible.
3. Remember to include listings of any command files, INCLUDE files, or relevant data files, and so forth.
4. Report only one problem per SPR. This will facilitate a faster response.
5. Mail the SPR package to Digital.

Experience shows that many SPR's do not contain enough information to duplicate or identify the problem. Concise, complete information helps Digital give accurate and timely service to software problems.

Chapter 2. Installing DECosap/AP and DECosap/H1

This chapter describes the installation procedure for DECosap/AP and DECosap/H1 on Digital UNIX. Before starting the installation, read Chapter 1, which describes general operations and requirements for installing the product.

The installation procedure describes how to install DECosap /AP and DECosap/H1 locally. In a local (node-specific) installation, the system on which you install the product uses its own disks to run it. The installation procedure loads DECosap/AP and DECosap/H1 files onto the disks that belong to the system where you perform the installation. When DECosap/AP and DECosap/H1 is run, its executable files are mapped into memory on the same system.

2.1. Installing CD-ROM Consolidated Distribution Media

Start the installation procedure as follows:

1. Mount the media on the appropriate disk drive.
2. Log in as superuser (login name root) to the system where you are installing DECosap/AP and DECosap/H1 for Digital UNIX.
3. Make sure that you are at the root (/) directory by entering the following command:

   ```
   #  cd /
   ```

4. Specify the /mnt directory to be the mount point for the distribution file system on the drive. If your drive is ral, enter the following command:

   ```
   #  mount -dr /dev/rz4c /mnt
   ```

5. Enter a setld command that specifies the load function (-l) and identifies the directory in the mounted file system where DECosap/AP and DECosap/H1 subsets are located.

   For example, if the directory location for these subsets is /mnt/OSAP300, enter the following command:

   ```
   #  setld -l /mnt/OSAP300
   ```

2.2. Responding to Installation Procedure Prompts

This section explains the installation procedure prompts and displays.

2.2.1. Selecting Subsets

After you enter the setld command for local (node-specific) installations, the installation procedure displays the names of the DECosap/AP and DECosap/H1 subsets and asks you to specify the subsets that you want to load:

The subsets listed below are optional:

There may be more optional subsets than can be presented on a single screen. If this is the case, you can choose subsets screen by screen or all at once on the last screen. All of the choices you make will be collected for your confirmation before any subsets are installed.

1. DECosap/AP Omni Services for SINEC AP
2. DECosap/AP Manual Pages
3. DECosap/H1 Omni Services for SINEC H1
4. DECosap/H1 Manual Pages

Or you may choose one of the following options:

1. ALL of the above
2. CANCEL selections and redisplay menus
3. EXIT without installing any subsets

Enter your choices or press RETURN to redisplay menus.

Choices (for example, 1 2 4-6):

If you specify more than one number at the prompt, separate each number with a space, not a comma.

Next, the script lets you verify your choice. For example, if you enter 5 in response to the previous prompt, you will see the following display:

```
You are installing the following subsets:
                     DECosap/AP Omni Services for SINEC AP
                     DECosap/AP Manual Pages
                     DECosap/H1 Omni Services for SINEC H1
                     DECosap/H1 Manual Pages

              Is this correct? (y/n):
```

If the displayed subsets are not the ones you intended to choose, enter n. In this case, the subset selection menu is again displayed, and you can correct your choice of optional subsets.

If the displayed subsets are the ones you want to load, enter y.

2.2.2. Monitoring Displays During the Subset Loading Process

The procedure displays a message that the installation is starting:

```
Checking file system space required to install selected subsets:

File system space checked OK.

            Installation procedure for:

The installation procedure continues.
```

If you are running the DECosap/AP and DECosap/H1 for Digital UNIX installation procedure but the NULL-INTERNET address was not configured, the following message appears:

```
Configuring SAPINT300
```

The null-internet is not configured for DECnet/OSI on this system, it must be configured in order to use DECosap for Digital UNIX. The proposed inactive area (null-internet) address is: { 49::FF-FF }. Use this address, unless it is already used on the network your system is connected to, or an address supplied by your network manager. If you are unsure about the address to use, please accept the proposed value.

To change the address permanently, edit the file /var/dna/script/start_routing.ncl and include this address.

Please enter the inactive area address or press Return to accept the proposed value [49::FF-FF] :

```
You can run the IVP or you can run it later using the following command:
        setld -v subsetname
It is recommended that you run the IVP to verify the installation.
Do you want to run the IVP now ? (y/n)
```

If you do not wish to run the IVP now, enter n. (To run the IVP after installation, see Chapter 3.) The installation procedure completes.

If you wish to run the IVP now, enter y. To continue with the IVP, see Chapter 3.

Appendix B contains the full listings for sample installation procedure.

Chapter 3 discusses the post-installation requirements specified in the final informational messages from the procedure.

If, during the course of the installation, you encounter errors from the setld utility, see the Diagnostics section of the setld(8) reference page for an explanation of the error and the appropriate action to take.

If the verification process fails, you can look in the file /var/adm/smlogs/fverify.log to find information that can help you diagnose the problem.

Chapter 3. Completing the Installation

This chapter explains what you need to do after the installation to make DECosap/AP and DECosap/H1 for Digital UNIX ready for use and describes how to access the DECosap /AP and DECosap/H1 for Digital UNIX documentation.

3.1. Running the Installation Verification Procedure

After installing DECosap/AP and DECosap/H1 for Digital UNIX, you should run the Installation Verification Procedure (IVP) independently to verify that the software is correctly installed and ready to use on your system. You might also want to run the IVP after a system failure to be sure that users can access DECosap/AP and DECosap/H1.

To run the IVP, enter one of the following commands:

```
#  setld -v SAPINT300

#  setld -v SH1INT300
```

For a complete sample DECosap/AP and DECosap/H1 IVP, see Appendix B.

3.2. Location of Example Programs

Several example programs are shipped with the DEComni BASE subsets. These files are located in the directory:

- /var/opt/osap_300/examples for SAPINT300
- /var/opt/osh1_300/examples for SAPMAN300

3.3. Deleting DECosap/AP and DECosap/H1 from Your System

If you must remove a version of DECosap/AP and DECosap/H1 from your system, delete each subset that you previously installed.

To delete subsets:

1. Log in as superuser (login name root).
2. Make sure you are at the root directory (/) by entering the following command:

   ```
   #  cd /
   ```

3. Enter the following form of the setld command:

   ```
   #  setld -i | grep SAP
   ```

   or

   ```
   #  setld -i | grep SH1
   ```

4. Look for the word "installed" in the listing produced, then delete the installed subsets. For example:

```
#  setld -d

#  setld -d SH1INT300
```

3.4. Displaying Documentation from CD-ROM

The DECosap/AP and DECosap/H1 for Digital UNIX documentation is provided on the Digital UNIX Layered Products Online Documentation CD-ROM in Bookreader (.DECW$BOOK) file format. You can display the Bookreader files on your workstation using the DECwindows Bookreader application. For information about accessing and displaying these files, refer to the *Digital UNIX Layered Products Disc User's Guide*.

Appendix A. Files Installed on Your System

Section A.1 and Section A.2 list the DECosap/AP and DECosap /H1 for Digital UNIX directories and files installed by the DECosap/AP Omni Services for SINEC AP. Section A.3 and Section A.4 list the DECosap/AP and DECosap/H1 directories and files installed by the DECosap/AP Manual Pages.

A.1. Files Installed by the SAPINT300 Subset

```
/var/opt/osap_300/examples
client.c
many_connections.c
many_connections.csh
osap_create_definition.c
osap_domain_services.c
osap_get_var_attr.c
osap_ivp
osap_ivp.c
osap_pi_services.c
osap_unsolst.c
osap_unsolst_server.c
osap_vmd_services.c
runivp_ap
server.c
switch_board.c

/usr/opt/osap_300/lib
libosap_ap.a
libosap_ap.so
libosap_spt.a
libosap_spt.so
osap_codes.cat

/usr/opt/osap_300/include
omni_integrator2_defs_include.h
osap_codes.h

/usr/opt/osap_300/doc
relnotes.ps
relnotes.txt
```

A.2. Files Installed by the SAPMAN300 Subset

```
/usr/share/man/man3/omni_define.3sap
omni_exchange_data.3sap
omni_get_definition.3sap
omni_get_handle_by_name.3sap
omni_get_handle_list.3sap
omni_get_indications.3sap
omni_get_value.3sap
omni_listen.3sap
omni_modify_definition.3sap
omni_put_value.3sap
omni_send_value.3sap
```

A.3. Files Installed by the SH1INT300 Subset

```
/var/opt/osh1_300/examples
client.c
many_connections.c
many_connections.csh
osap_create_definition.c
osap_domain_services.c
osap_pi_services.c
osap_vmd_services.c
osh1_ivp
osh1_ivp.c
runivp_h1
server.c
switch_board.c

/usr/opt/osh1_300/lib
libosap_h1.a
libosap_h1.so
libosap_spt.a
libosap_spt.so
osh1_codes.cat

/usr/opt/osh1_300/include
omni_integrator3_defs_include.h
osh1_codes.h

/usr/opt/osh1_300/doc
relnotes.ps
relnotes.txt
```

A.4. Files Installed by the SH1MAN300 Subset

```
/usr/share/man/man3
omni_define.3sh1
omni_exchange_data.3sh1
omni_get_definition.3sh1
omni_get_handle_by_name.3sh1
omni_get_handle_list.3sh1
omni_get_indications.3sh1
omni_get_value.3sh1
omni_listen.3sh1
omni_modify_definition.3sh1
omni_put_value.3sh1
omni_send_value.3sh1
```

Appendix B. Sample Listings for DECosap/AP and DECosap/H1 Installation on Digital UNIX

This appendix provides sample listings for the following procedures:

- An installation of DECosap/AP and DECosap/H1 for Digital UNIX on an AXP Alpha system using disk media
- An Installation Verification Procedure (IVP)

B.1. Installation on an AXP System Using Disk Media

```
The subsets listed below are optional:
There may be more optional subsets than can be presented on a single
        screen. If this is the case, you can choose subsets screen by
 screen
        or all at once on the last screen. All of the choices you make will
        be collected for your confirmation before any subsets are
 installed.

             1) DECosap/AP Omni Services for SINEC AP
             2) DECosap/AP Reference Pages
             3) DECosap/H1 Omni Services for SINEC H1
             4) DECosap/H1 Reference Pages
        Enter your choices or press RETURN to display the next screen.

        Choices (for example, 1 2 4-6): 5

        You are installing the following optional subsets:

                DECosap/AP Omni Services for SINEC AP
                DECosap/AP Reference Pages
                DECosap/H1 Omni Services for SINEC H1
                DECosap/H1 Reference Pages

        Is this correct? (y/n): y

        Checking file system space required to install selected subsets:
    File system space checked OK.
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    Government is subject to restrictions as set forth in subparagraph
    (c) (1) (ii) of DFARS 252.227-7013, or in FAR 52.227-19, or in FAR
    52.227-14 Alt. III, as applicable.

    This software is proprietary to and embodies the confidential
    technology of Digital Equipment Corporation. Possession, use, or
    copying of this software and media is authorized only pursuant to a
```

```
   valid written license from Digital or an authorized sublicensor.

   DECosap/H1 Omni Services for SINEC H1
      Copying from . (disk)
      Verifying

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   (c) (1) (ii) of DFARS 252.227-7013, or in FAR 52.227-19, or in FAR
   52.227-14 Alt. III, as applicable.

   This software is proprietary to and embodies the confidential
   technology of Digital Equipment Corporation. Possession, use, or
   copying of this software and media is authorized only pursuant to a
   valid written license from Digital or an authorized sublicensor.

   DECosap/AP Omni Services for SINEC AP
      Copying from . (disk)
      Verifying
   Copyright (C) Digital Equipment Corporation. 1996. All Rights Reserved.

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   This software is proprietary to and embodies the confidential
   technology of Digital Equipment Corporation. Possession, use, or
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   DECosap/AP Reference Pages
      Copying from . (disk)
      Verifying
       Installation procedure for SH1INT300.

       SH1INT300 software successfully installed.

       The null-internet is not configured for DECnet/OSI on this system,
it
       must be configured in order to use DECosap (H1) for DEC OSF/1 AXP.
The
       proposed inactive area (null-internet) address is: { 49::FF-FF }.
Use
       this address, unless it is already used on the network your system
is
       connected to, or an address supplied by your network manager. If
you are
       unsure about the address to use, please accept the proposed value.
       To change the address permanently, edit the file
       /var/dna/script/start_routing.ncl and include this address.

       Please enter the inactive area address or press Return to accept
the
       proposed value [ 49::FF-FF ] :
```

B.2. Sample Installation Verification Procedure for DECosap/AP Omni Services for SINEC AP

```
Checking file system space required to install specified subsets:

File system space checked OK.
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(c) (1) (ii) of DFARS 252.227-7013, or in FAR 52.227-19, or in FAR
52.227-14 Alt. III, as applicable.

This software is proprietary to and embodies the confidential
technology of Digital Equipment Corporation. Possession, use, or
copying of this software and media is authorized only pursuant to a
valid written license from Digital or an authorized sublicensor.

DECosap/AP Omni Services for SINEC AP
Copying from . (disk)
Verifying

Installation procedure for SAPINT300.

SAPINT300 software successfully installed.

Configuring "DECosap/AP Omni Services for SINEC AP" (SAPINT300)
Installation configuration procedure for SAPINT300.
Checking your system configuration and configuring DECosap SINEC AP
 services
for DEComni.  This will take a few minutes and requires your attention,
please stand by.

Adding DECosap SINEC AP services to DEComni.
This will take a few minutes, please stand by.

It is recommended that you run the IVP to verify the installation:
you can run it now by replying 'yes' to the following question,
or you can run it later using the following command:
        setld -v SAPINT300

Do you want to run the IVP now ? (y/n) y

DECosap for Digital UNIX V3.0 - Building IVP
DECosap for Digital UNIX V3.0 - Starting IVP
DECosap for Digital UNIX V3.0 - Installation Verification Procedure (IVP)

IVP: omni_server is not active ... starting omni_server

Startup procedure for: DEComni for Digital UNIX V3.0

*****************************************************
* omni_startup now calling the ods_startup procedure *
*****************************************************

Checking for required directories ...
```

```
Checking for required files ...

Checking cache area /ods/cache/ ...

/ods/cache/ods_cache_5.dat: Compressed by 7.14% [11 entries]
/ods/cache/ods_cache_13.dat: Compressed by 8.00% [8 entries]

Checking Schema area /ods/local/ ...

Valid Schema definitions found in the attribute schema database as:
OC ALIASED_NAME CN C L S O OU P_ADDR APC OWNER APT AEQ MAPV SY OBJ_ID BER
PSAP SSAP TSAP N_ADDR AS_LIST DESCR VMD DOM DEL VN APPSN APROF VERSION
NLEVEL MAX_CALLED MAX_CALLING MAX_SEG CBB_LIST SS_LIST VENDOR MODEL REV
INUM DN SHARE CONT_FILE CAP_FILE PN REUSE ARG MON DOM_LIST VAR ATYPE
ADDR_T ADDR_V NETADDRESS RESPTIMER COMPLTIMER MUX NEGOTIATION

Valid Schema definitions found in the object class schema database as:
TOP ALIAS C L O OU AP AE DSA DEVICE TAE OAE AS VMD DOMAIN PI NVAR UNVAR
 OSAP

ODS_STARTUP: Normal completion.
*****************************************************
* omni_startup now calling the omni_schema procedure *
*****************************************************

omni_schema.sh: Normal Completion.

************************************************
* omni_startup now registering the omniview VMD *
************************************************

The omniview VMD (omni_local_vmd) is already registered.

*******************************************************
omni_startup: now starting the omni_server daemon...DONE.
pid: 5999
*******************************************************

The DEComni for Digital UNIX V3.0 startup has successfully completed.

IVP: defining VMD's for IVP
IVP: starting the application server
OSAPIVPS - create_vmd: OSAPIVPC (OSAPIVPC)
OSAPIVPS - create_vmd: OSAPIVPS (OSAPIVPS)
OSAPIVPS - create_domain: SIMATIC_S5 on OSAPIVPC
OSAPIVPS - create_domain: OSAP_DOM1 on OSAPIVPC
OSAPIVPS - create_domain: OSAP_DOM3 on OSAPIVPC
OSAPIVPS - create_pi: OSAP_PI1 () on OSAPIVPC
OSAPIVPS - create_message: LocalMessage (1024 bytes max message) on
 OSAPIVPS
OSAPIVPS - create_message: RemoteMessage (1024 bytes max message) on
 OSAPIVPC
OSAPIVPS - define_simple_type: NT_Bool on OSAPIVPS
OSAPIVPS - define_named_var: VMD_BOOL on OSAPIVPS
OSAPIVPS - define_simple_type: NT_Int8 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_INT8 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_Int16 on OSAPIVPS
```

```
OSAPIVPS - define_named_var: VMD_INT16 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_Int32 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_INT32 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_Un8 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_UN8 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_Un16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_UN16 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_Un32 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_UN32 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_FP on OSAPIVPS
OSAPIVPS - define_named_var: VMD_FP on OSAPIVPS
OSAPIVPS - define_simple_type: NT_BS16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_BS16 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_OS16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_OS16 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_VS16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_VS16 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_TI on OSAPIVPS
OSAPIVPS - define_named_var: VMD_TI on OSAPIVPS
OSAPIVPS - define_simple_type: NT_TD on OSAPIVPS
OSAPIVPS - define_named_var: VMD_TD on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArBool on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARBOOL on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArInt16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARINT8 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArInt8 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARINT16 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArInt32 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARINT32 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArUn8 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARUN8 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArUn16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARUN16 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArUn32 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARUN32 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArFP on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARFP on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArBS16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARBS16 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArOS16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_AROS16 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArVS16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARVS16 on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArTI on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARTI on OSAPIVPS
OSAPIVPS - define_array_type: NT_ArTD on OSAPIVPS
OSAPIVPS - define_named_var: VMD_ARTD on OSAPIVPS
OSAPIVPS - define_array_type: NT_Ar_Ar on OSAPIVPS
OSAPIVPS - define_named_var: VMD_AR_AR on OSAPIVPS
OSAPIVPS - define_struct_type: NT_Str_1 on OSAPIVPS
OSAPIVPS - define_array_type: NT_Ar_Str on OSAPIVPS
OSAPIVPS - define_named_var: VMD_AR_STR on OSAPIVPS
OSAPIVPS - define_struct_type: NT_Str_All on OSAPIVPS
OSAPIVPS - define_named_var: VMD_STR_ALL on OSAPIVPS
OSAPIVPS - define_struct_type: NT_Str_Ar on OSAPIVPS
OSAPIVPS - define_named_var: VMD_STR_AR on OSAPIVPS
OSAPIVPS - define_struct_type: NT_Str_2 on OSAPIVPS
OSAPIVPS - define_struct_type: NT_Str_Str on OSAPIVPS
```

```
OSAPIVPS - define_named_var: VMD_STR_STR on OSAPIVPS
OSAPIVPS - define_simple_type: NT_WCOS16 on OSAPIVPS
OSAPIVPS - define_named_var: VMD_WCOS16 on OSAPIVPS
OSAPIVPS - define_simple_type: NT_Bool on OSAPIVPC
OSAPIVPS - define_named_var: VMD_BOOL on OSAPIVPC
OSAPIVPS - define_simple_type: NT_Int8 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_INT8 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_Int16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_INT16 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_Int32 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_INT32 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_Un8 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_UN8 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_Un16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_UN16 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_Un32 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_UN32 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_FP on OSAPIVPC
OSAPIVPS - define_named_var: VMD_FP on OSAPIVPC
OSAPIVPS - define_simple_type: NT_BS16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_BS16 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_OS16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_OS16 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_VS16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_VS16 on OSAPIVPC
OSAPIVPS - define_simple_type: NT_TI on OSAPIVPC
OSAPIVPS - define_named_var: VMD_TI on OSAPIVPC
OSAPIVPS - define_simple_type: NT_TD on OSAPIVPC
OSAPIVPS - define_named_var: VMD_TD on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArBool on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARBOOL on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArInt16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARINT8 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArInt8 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARINT16 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArInt32 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARINT32 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArUn8 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARUN8 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArUn16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARUN16 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArUn32 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARUN32 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArFP on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARFP on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArBS16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARBS16 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArOS16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_AROS16 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArVS16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARVS16 on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArTI on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARTI on OSAPIVPC
OSAPIVPS - define_array_type: NT_ArTD on OSAPIVPC
OSAPIVPS - define_named_var: VMD_ARTD on OSAPIVPC
OSAPIVPS - define_array_type: NT_Ar_Ar on OSAPIVPC
OSAPIVPS - define_named_var: VMD_AR_AR on OSAPIVPC
OSAPIVPS - define_struct_type: NT_Str_1 on OSAPIVPC
```

```
OSAPIVPS - define_array_type: NT_Ar_Str on OSAPIVPC
OSAPIVPS - define_named_var: VMD_AR_STR on OSAPIVPC
OSAPIVPS - define_struct_type: NT_Str_All on OSAPIVPC
OSAPIVPS - define_named_var: VMD_STR_ALL on OSAPIVPC
OSAPIVPS - define_struct_type: NT_Str_Ar on OSAPIVPC
OSAPIVPS - define_named_var: VMD_STR_AR on OSAPIVPC
OSAPIVPS - define_struct_type: NT_Str_2 on OSAPIVPC
OSAPIVPS - define_struct_type: NT_Str_Str on OSAPIVPC
OSAPIVPS - define_named_var: VMD_STR_STR on OSAPIVPC
OSAPIVPS - define_simple_type: NT_WCOS16 on OSAPIVPC
OSAPIVPS - define_named_var: VMD_WCOS16 on OSAPIVPC
OSAPIVPS - define_unnamed_var: DB:190:12 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:12 on OSAPIVPC
OSAPIVPS - Listening for OSAPIVPC ...
OSAPIVPS - Listen completed, accepting connection
OSAPIVPS - Connection succesfully accepted
OSAPIVPS - Entering server mode
OSAPIVPS - define_unnamed_var: DB:190:0 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:1 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:2 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:3 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:5 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:6 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:7 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:9 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:11 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:20 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:434 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:436 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:30 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:40 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:50 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:60 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:80 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:90 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:100 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:120 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:140 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:150 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:230 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:439 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:459 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:348 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:344 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:310 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:370 on OSAPIVPS
OSAPIVPS - define_unnamed_var: DB:190:390 on OSAPIVPS
OSAPIVPS - creating local unnamed variables group on OSAPIVPS
OSAPIVPS - READ Indication Received for variable VMD_BOOL
OSAPIVPS - Put Value Completed - variable VMD_BOOL
OSAPIVPS - INFORMATION REPORT Indication Received for variable VMD_INT8
OSAPIVPS - Get Value Completed - variable VMD_INT8
OSAPIVPS - WRITE Indication Received for variable VMD_INT32
OSAPIVPS - Get Value Completed - variable VMD_INT32
OSAPIVPS - READ Indication Received for variable VMD_UN16
OSAPIVPS - Put Value Completed - variable VMD_UN16
OSAPIVPS - INFORMATION REPORT Indication Received for variable VMD_FP
OSAPIVPS - Get Value Completed - variable VMD_FP
```

```
OSAPIVPS - WRITE Indication Received for variable VMD_BS16
OSAPIVPS - Get Value Completed - variable VMD_BS16
OSAPIVPS - READ Indication Received for variable VMD_TI
OSAPIVPS - Put Value Completed - variable VMD_TI
OSAPIVPS - INFORMATION REPORT Indication Received for variable VMD_ARBOOL
OSAPIVPS - Get Value Completed - variable VMD_ARBOOL
OSAPIVPS - WRITE Indication Received for variable VMD_ARUN16
OSAPIVPS - Get Value Completed - variable VMD_ARUN16
OSAPIVPS - READ Indication Received for variable VMD_AROS16
OSAPIVPS - Put Value Completed - variable VMD_AROS16
OSAPIVPS - INFORMATION REPORT Indication Received for variable VMD_ARVS16
OSAPIVPS - Get Value Completed - variable VMD_ARVS16
OSAPIVPS - WRITE Indication Received for variable VMD_ARTD
OSAPIVPS - Get Value Completed - variable VMD_ARTD
OSAPIVPS - READ Indication Received for variable VMD_AR_AR
OSAPIVPS - Put Value Completed - variable VMD_AR_AR
OSAPIVPS - INFORMATION REPORT Indication Received for variable VMD_AR_STR
OSAPIVPS - Get Value Completed - variable VMD_AR_STR
OSAPIVPS - INFORMATION REPORT Indication Received for variable VMD_STR_ALL
    OSAPIVPS - Get Value Completed - variable VMD_STR_ALL
    OSAPIVPS - READ Indication Received for variable VMD_STR_AR
    OSAPIVPS - Put Value Completed - variable VMD_STR_AR
    OSAPIVPS - WRITE Indication Received for variable VMD_STR_STR
    OSAPIVPS - Get Value Completed - variable VMD_STR_STR
    OSAPIVPS - READ Indication Received for OSAPIVPC - create_vmd: OSAPIVPS
 (OSAPIVPS)
    OSAPIVPC - create_vmd: OSAPIVPC (OSAPIVPC)
    OSAPIVPC - create_domain: SIMATIC_S5 on OSAPIVPS
    OSAPIVPC - create_domain: OSAP_DOM1 on OSAPIVPS
    OSAPIVPC - create_domain: OSAP_DOM3 on OSAPIVPS
    OSAPIVPC - create_pi: OSAP_PI1 () on OSAPIVPS
    OSAPIVPC - create_message: LocalMessage (1024 bytes max message) on
 OSAPIVPC
    OSAPIVPC - create_message: RemoteMessage (1024 bytes max message) on
 OSAPIVPS
    OSAPIVPC - Connecting to OSAPIVPS ...
    OSAPIVPC - Connect Completed
    OSAPIVPC - define_simple_type: NT_Bool on OSAPIVPS
    OSAPIVPC - define_named_var: VMD_BOOL on OSAPIVPS
    OSAPIVPC - Get Value Completed - variable VMD_BOOL
    OSAPIVPC - define_simple_type: NT_Int8 on OSAPIVPC
    OSAPIVPC - define_named_var: VMD_INT8 on OSAPIVPC
    OSAPIVPC - Send Value Completed - variable VMD_INT8
    OSAPIVPC - define_simple_type: NT_Int32 on OSAPIVPS
    OSAPIVPC - define_named_var: VMD_INT32 on OSAPIVPS
    OSAPIVPC - Put Value Completed - variable VMD_INT32
    OSAPIVPC - define_simple_type: NT_Un16 on OSAPIVPS
    OSAPIVPC - define_named_var: VMD_UN16 on OSAPIVPS
    OSAPIVPC - Get Value Completed - variable VMD_UN16
    OSAPIVPC - define_simple_type: NT_FP on OSAPIVPC
    OSAPIVPC - define_named_var: VMD_FP on OSAPIVPC
    OSAPIVPC - Send Value Completed - variable VMD_FP
    OSAPIVPC - define_simple_type: NT_BS16 on OSAPIVPS
    OSAPIVPC - define_named_var: VMD_BS16 on OSAPIVPS
        OSAPIVPC - Put Value Completed - variable VMD_BS16
        OSAPIVPC - define_simple_type: NT_TI on OSAPIVPS
        OSAPIVPC - define_named_var: VMD_TI on OSAPIVPS
        OSAPIVPC - Get Value Completed - variable VMD_TI
```

```
        OSAPIVPC - define_simple_type: NT_Bool on OSAPIVPC
        OSAPIVPC - define_array_type: NT_ArBool on OSAPIVPC
        OSAPIVPC - define_named_var: VMD_ARBOOL on OSAPIVPC
        OSAPIVPC - Send Value Completed - variable VMD_ARBOOL
        OSAPIVPC - define_array_type: NT_ArUn16 on OSAPIVPS
        OSAPIVPC - define_named_var: VMD_ARUN16 on OSAPIVPS
        OSAPIVPC - Put Value Completed - variable VMD_ARUN16
        OSAPIVPC - define_simple_type: NT_OS16 on OSAPIVPS
        OSAPIVPC - define_array_type: NT_ArOS16 on OSAPIVPS
        OSAPIVPC - define_named_var: VMD_AROS16 on OSAPIVPS
        OSAPIVPC - Get Value Completed - variable VMD_AROS16
        OSAPIVPC - define_simple_type: NT_VS16 on OSAPIVPC
        OSAPIVPC - define_array_type: NT_ArVS16 on OSAPIVPC
        OSAPIVPC - define_named_var: VMD_ARVS16 on OSAPIVPC
OSAPIVPC - Send Value Completed - variable VMD_ARVS16
OSAPIVPC - define_simple_type: NT_TD on OSAPIVPS
OSAPIVPC - define_array_type: NT_ArTD on OSAPIVPS
OSAPIVPC - define_named_var: VMD_ARTD on OSAPIVPS
OSAPIVPC - Put Value Completed - variable VMD_ARTD
OSAPIVPC - define_simple_type: NT_Int16 on OSAPIVPS
OSAPIVPC - define_array_type: NT_ArInt8 on OSAPIVPS
OSAPIVPC - define_array_type: NT_Ar_Ar on OSAPIVPS
OSAPIVPC - define_named_var: VMD_AR_AR on OSAPIVPS
OSAPIVPC - Get Value Completed - variable VMD_AR_AR
OSAPIVPC - define_simple_type: NT_Int16 on OSAPIVPC
OSAPIVPC - define_simple_type: NT_BS16 on OSAPIVPC
OSAPIVPC - define_struct_type: NT_Str_1 on OSAPIVPC
OSAPIVPC - define_array_type: NT_Ar_Str on OSAPIVPC
OSAPIVPC - define_named_var: VMD_AR_STR on OSAPIVPC
OSAPIVPC - Send Value Completed - variable VMD_AR_STR
OSAPIVPC - define_simple_type: NT_Int32 on OSAPIVPC
OSAPIVPC - define_simple_type: NT_Un8 on OSAPIVPC
OSAPIVPC - define_simple_type: NT_Un16 on OSAPIVPC
OSAPIVPC - define_simple_type: NT_Un32 on OSAPIVPC
OSAPIVPC - define_simple_type: NT_OS16 on OSAPIVPC
OSAPIVPC - define_simple_type: NT_TI on OSAPIVPC
OSAPIVPC - define_simple_type: NT_TD on OSAPIVPC
OSAPIVPC - define_struct_type: NT_Str_All on OSAPIVPC
OSAPIVPC - define_named_var: VMD_STR_ALL on OSAPIVPC
OSAPIVPC - Send Value Completed - variable VMD_STR_ALL
OSAPIVPC - define_array_type: NT_ArBool on OSAPIVPS
OSAPIVPC - define_struct_type: NT_Str_Ar on OSAPIVPS
OSAPIVPC - define_named_var: VMD_STR_AR on OSAPIVPS
OSAPIVPC - Get Value Completed - variable VMD_STR_AR
OSAPIVPC - define_simple_type: NT_Int8 on OSAPIVPS
OSAPIVPC - define_simple_type: NT_Un8 on OSAPIVPS
OSAPIVPC - define_simple_type: NT_Un32 on OSAPIVPS
OSAPIVPC - define_simple_type: NT_FP on OSAPIVPS
OSAPIVPC - define_simple_type: NT_VS16 on OSAPIVPS
OSAPIVPC - define_struct_type: NT_Str_All on OSAPIVPS
OSAPIVPC - define_struct_type: NT_Str_2 on OSAPIVPS
OSAPIVPC - define_struct_type: NT_Str_Str on OSAPIVPS
OSAPIVPC - define_named_var: VMD_STR_STR on OSAPIVPS
OSAPIVPC - Put Value Completed - variable VMD_STR_STR
OSAPIVPC - Get Remote Attributes Completed - variable VMD_STR_STR
OSAPIVPC - Attributes for Variable VMD_STR_STR
   Numeric Address: 0002ff8b
   structure
```

```
      component_name VMD_STR_ALL
         structure
            component_name VMD_BOOL
               boolean
            component_name VMD_INT8
               integer 8
            component_name VMD_INT16
               integer 16
            component_name VMD_INT32
               integer 32
            component_name VMD_UN8
               unsigned 8
            component_name VMD_UN16
               unsigned 16
            component_name VMD_UN32
               unsigned 32
            component_name VMD_FP
               floating_point: format 32, exp 8
            component_name VMD_BS16
               bit_str [16]
            component_name VMD_OS16
               octet_str [16]
            component_name VMD_VS16
               visible_str [16]
            component_name VMD_TI
               binary_time
            component_name VMD_TD
               binary_time with date
         end_of_structure
            component_name VMD_STR_2
               structure
            component_name VMD_BOOL
               boolean
            component_name VMD_OS16
               octet_str [16]
          end_of_structure
          end_of_structure
OSAPIVPC - Get Value Completed - message
OSAPIVPC - Exchange Message Completed
OSAPIVPC - Conclude Completed message
OSAPIVPS - Put Value Completed - message
OSAPIVPS - MESSAGE EXCHANGE Indication Received.
OSAPIVPS - Exchange Message Completed
OSAPIVPS - ACSE CONCLUDE Indication Received.
OSAPIVPS - Exiting server mode due to acse conclude indication
IVP: deleting definitions for IVP VMD's
IVP: omni_server was not active when this IVP was started
IVP: omni_server (pid=5999) is being killed
DECosap for Digital UNIX V3.0 - IVP successfully terminated
SAPINT300 software successfully installed and configured.
```