Guide to Troubleshooting and Hints for

the OpenView Operations Agent for OpenVMS

February 2006

This document provides troubleshooting guidelines and hints for using the OVO Agents on OpenVMS.

Revision/Update Information: V1.4

Software Version: OpenView Operations Agent for OpenVMS Version 2.0

Hewlett-Packard Company
Palo Alto, California

CONTENTS

TABLES

Preface

Document: Guide to Troubleshooting and Hints for the OpenView Operations Agent for OpenVMS.
Date: February 21, 2006
Version: V1.4

The purpose of this document is to provide troubleshooting guidelines and hints using for the OVO Agents on OpenVMS.

Note: Sections of this document previously appeared in various HP training and HP internal support documents.

Table 1: Other Useful Information

Document-URL	Description
Application Integration Guide, Edition 5	Version A07.00, Jan. 02

Table 2: Revision History

Version	Change	date
V1.4	Add delete of templates when errors exist	Feb 21, 2006
V1.3	Add enable log files for VMSSPI in newer kits	Feb 14, 2006
V1.2	change sys0 to sys$specific in DCE area	August 24, 2005
V1.1	Add section about synchronizing packages for OVOW	August 10, 2005
V1.0	Add OVOW 7.5 self-healing	June 8, 2005

OpenVMS, Alpha, Tru64 UNIX, HP-UX, VantagePoint, OpenView and are registered trademarks of Hewlett-Packard Company.

UNIX is a registered trademark of the Open Group.

Windows, MS Windows, Windows 2000 and Windows NT are registered trademarks of Microsoft Corporation.

1   Executive Summary

HP OpenView (OVO) is a family of products that provide comprehensive system management tools.

OVO installs as a single management server. OVO operators run a console that is part of the OVO server. The OVO server agent software can be pushed (that is, copied) to systems, thus making them managed nodes. These managed nodes run the OVO agent software that collects local management data and returns information to its assigned management server.

Both the server and the agent support interfaces with which developers can integrate their programs. Common integration tasks are to create new OVO messages and manage the message lifecycle (that is, create, update, acknowledge, and delete).

The agents can manage locally collected data by means of templates. Template definitions include thresholds to monitor, messages to suppress, and actions that can be executed on the node. Templates are created within the operator console and then distributed to managed nodes.

One of the key data structures in OVO is the OVO message. This message encapsulates management data, indicates actions that are taken and available and that can also be annotated real-time by operators.

1.1   OVO Agent

The OVO agent is comprised of several processes that handle sub-tasks such as transmitting OVO messages and monitoring threshold values on a node. The agent supports a library of APIs that interact with various processes to give developers access to the capabilities of the agent. The capabilities of interest in this project are the following:

- Messages

  OVO supports a comprehensive Message Stream Interface API on the agent. This API establishes a connection session and allows for comprehensive management of messages. The agent also supports a simplified API only for the creation of messages (the opcmsg API).

- Monitors

  The agent supports APIs for inputting values for threshold monitors defined on the managed node (the opcmon API).

- Actions

  Agents support the execution of various actions (automatic and user-initiated). Actions are defined in the message templates that are installed on the agent.

- Control Agent

  This agent starts agent processes that depend upon the configuration file. It receives start, stop, status, or updated configuration requests from the management server. It also responds to abnormal terminations of other agent processes and queues command requests from the management server to the action agent.

- Distribution Agent

This agent changes configuration at the request of the management server. It communicates with the Distibution Manager and the Control Agent on an OVOU Management Server.

- Message Interceptor

  The message interceptor intercepts messages written to the MI queue.

- Log File Encapsulator

  The log file encapsulator reads log files and converts log files into OVO messages. It reads files on demand and at specified intervals.

2 Supported Hardware Platforms and Software Versions

Supported hardware platforms and software versions are shown in the following table.

System	Software Versions
OpenVMS Alpha	OpenVMS Version 7.3-1 (with current patches) and later
OpenVMS Itanium	Version 8.2 and later
Windows 2000	With current service packs, supported as a management server
HP-UX	Version 11.0/11.11 supported as a management server
Sun Solaris	Latest version supported by OVO as a management server
HP OpenView Operations	Version 7.12 supported on both HP-UX and Windows 2000 systems. OVO Version 8.1 also supported with the VMS agents.
TCP/IP	HP plans to support Version 5.3 and later on OpenVMS

NOTE

Process Software's Multinet and TCPWare are currently NOT supported by any version of the OVO Agent for OpenVMS.

3   Troubleshooting

This guide is not a comprehensive list of all possible solutions to troubleshooting the VMS agents. This section presents some ideas and techniques used in the past, to help isolate and fix potential issues with the OVO VMS agents.

3.1   How to Turn on Tracing in the OVO agents VMS

It is often useful to turn on TRACING in the OpenVMS Agents. Enabling the trace facility turns on print statements and adds them to a TRACE log file. This file can then be analyzed to determine where a failure might be occurring.

It is not recommended to run the agents with TRACE on constantly, since a large TRACE file is created and many I/Os are performed. To turn tracing on, execute the following steps:

1. Shut the agents and SPI down:

    $ @SYS$STARTUP:VMSSPI$SHUTDOWN

    $ @SYS$STARTUP:OVO$SHUTDOWN

2. Go to the Install directory:

    $ SET DEFAULT SYS$SPECIFIC:[OVO.OPT.OV.BIN.OPC.INSTALL]

3. Copy the OPCINFO file to another file for later use:

    $ COPY OPCINFO. OPCINFO_ORIGINAL.

4. To do this, use an editor to open OPCINFO.

    ```
    a) $ EDIT/EDT OPCINFO.

    b) Comment out these two lines:
      Opc_trace FALSE
      Opc_trace_area unknown

     By placing the '#' character in front of them.

     Remove the '#' from the following lines in the file:
     #OPC_TRACE TRUE
     #OPC_TRACE_AREA DEBUG,ALL
     #OPC_TRC_PROCS opcdista.exe
     #OPC_DBG_PROCS opcdista.exe
     #OPC_TEMPL_STATUS TRUE

    c) AND change the opcdista.exe to what ever agent you want to
    trace, in this example, a trace of the control agent is done
    by changing to opcctla.exe in the proper places.

    Do not delete the other lines in the file.
    Part of the file should now look like this:
    #OPC_TRACE FALSE
    #OPC_TRACE_AREA unknown
    OPC_TRACE TRUE
    OPC_TRACE_AREA DEBUG,ALL
    OPC_TRC_PROCS opcctla.exe
    OPC_DBG_PROCS opcctla.exe
    OPC_TEMPL_STATUS TRUE

    Exit out of the editor to SAVE the file you just created.
    ```

5. Restart the agents and SPI:

    $ @SYS$STARTUP:OVO$STARTUP

$ @SYS$STARTUP:VMSSPI$STARTUP

6. Push a template/policy from the OVOW/U server. (Pushing them all is o.k. too.)

7. Shut the agents down again (see step 1 above).

8. Reset OPCINFO to its original state. If you copied opcinfo to something else in step 3 above, simply copy it back:

   $ COPY OPCINFO_ORIGINAL. OPCINFO.

9. Restart the agents (Step 5).

10. A TRACE log file is created in: SYS$SPECIFIC:[OVO.VAR.OPT.OV.TMP.OPC]TRACE.

3.2 How to Turn on Logging in the VMSSPI and redirect log files in the OVO agents

If you are running a VMSSPI kit of January 11, 2006 (-31) or later, there is a chance you do not have VMSSPI logging turned on. To debug VMSSPI issues, you will need to enable logging in the VMSSPI. This can be done one of two ways. In either case the log files will take the form of the following:

VMSSPI$PERFORMANCE_nodename.LOG

VMSSPI$SECURITY_nodename.LOG

VMSSPI$SYSTEM_nodename.LOG

3.2.1 Option one for turning on logging

1. Shut the VMSSPI and OVO agents down:

   $@SYS$STARTUP:VMSSPI$SHUTDOWN

   $@SYS$STARTUP:OVO$SHUTDOWN

2. Reconfigure logging for the OVO Agents and VMSSPI. This is an example of the steps that may be taken. The fully qualified Management Server name should be re-entered as it was entered it the first time the OVO agents were configured. Note that you must answer "Y" to the question:Do you want to redirect the OVO log files?

   ```
   @sys$manager:ovo$config
   Enter fully qualified Management Server node name: node.zko.dec.com: test.zko.
   hp.com
   Do you want to redirect the OVO log files? [n]: y
    This procedure will mount a disk, create a logical name,
     and create a directory to be used for the OVO agents to
     write log files into.

   Please follow the exact syntax for the disk name, including
    the ':' at the end.
   Enter Disk name for log files -- <$1$DGA100:>: sys$sysdevice:
    Is the disk mounted?

   Device                Device          Error    Volume        Free  Trans Mnt
    Name                 Status          Count    Label       Blocks Count Cnt
   BEECH$DKB100:         Mounted            0    BEECH_732   14962410   386   1
   Is the disk mounted? [N]: y
   Directory -- <[ovo]>:
      "OVO$LOGDIR" = "SYS$SYSDEVICE:[OVO]" (LNM$SYSTEM_TABLE)
   %DIRECT-W-NOFILES, no files found
   ```

3. Restart the VMSSPI and OVOAGENTS

@SYS$STARTUP:OVO$STARTUP

@SYS$STARTUP:VMSSPI$STARTUP

3.2.2   Option two for turning on logging

Another way to turn on logging is to define the logical that controls the log file location. The log file must be set to a VALID disk and a VALID fully qualified directory. If you enter a disk that is not mounted to the machine where the VMSSPI is running or if you enter a directory that does not exist, the VMSSPI will not run.

1.   Shut the VMSSPI and OVO agents down:

   $@SYS$STARTUP:VMSSPI$SHUTDOWN

   $@SYS$STARTUP:OVO$SHUTDOWN

2.   Define the log file logical:

   $define/sys ovo$logdir SYS$SYSDEVICE:[OVO]

   All log files for the VMSSPI will now be written to the specified disk.

3.   Restart the VMSSPI and OVOAGENTS

   @SYS$STARTUP:OVO$STARTUP

   @SYS$STARTUP:VMSSPI$STARTUP

3.3   Agents not starting - DCE/RPC is Wedged

If the agents do not start after an unexpected power failure, system crash or other abnormal termination, the DCE/RPC daemon most likely did not shut down and clean up properly. In this case you need to delete the DCE/RPC data file and restart DCE/RPC.

1.   Check the DCE log file for COA and CFGPUSH messages; they must be removed. Show the DCE mappings by entering this command:

   $ MCR SYS$SYSTEM:DCE$RPCCP SHOW MAPPING

   Note the COA and cfgpush messages in the following example:

```
#object#        871cb3da-6e6c-115b-80a5-08002b86ad16
#interface id#  e1af8308-5d1f-11c9-91a4-08002b14a0fa,3.0
#string binding# ncadg_ip_udp:16.32.16.251[135]
#annotation#     Endpoint Resolution
#object#         nil
#interface id#  9e0c0224-3654-0000-9a8d-08000949ab4c,2.0
#string binding# ncacn_ip_tcp:16.32.16.251[49824]
#annotation#     Control Agent (COA)
#object#         nil
#interface id#  9e0c0224-3654-0000-9a8d-08000949ab4c,2.0
#string binding# ncadg_ip_udp:16.32.16.251[49205]
#annotation#     Control Agent (COA)
#object#         nil
#interface id#  0d8fe322-d6ee-11d2-b858-0800096df3a6,1.0
#string binding# ncacn_ip_tcp:16.32.16.251[49824]
#annotation#     Control Agent (cfgpush)
#object#         nil
#interface id#  0d8fe322-d6ee-11d2-b858-0800096df3a6,1.0
#string binding# ncadg_ip_udp:16.32.16.251[49205]
#annotation#     Control Agent (cfgpush)
```

2.   From the system account, shut down DCE:

$ @SYS$MANAGER:DCE$RPC_SHUTDOWN CLEAN

3. Delete the agent "PIDS" file:

    $ DELETE OVO$ROOT:[var.opt.ov.tmp.opc]PIDS.;

4. Delete the DCE/RPC data base file:

    $ DELETE SYS$SPECIFIC:[DCELOCAL.VAR.DCED]EP.DB;*

5. Start DCE again:

    $ @SYS$MANAGER:DCE$RPC_STARTUP

6. Note that the COA and cfgpush messages should disappear. Repeat step 1 above to make sure.

7. Start the OVO VMS agents again:

    $ ovoagt -start

3.4   Error Starting the Control Agent

In this example, DCE/RCP was not fully up or was not started.

Examine the log control agent log file in:

SYS$SPECIFIC:[OVO.VAR.OPT.OV.LOG.OPC]OVO$OPCACTA.LOG

and determine if the control agent failed. Look for the following message:

```
Error opcctla.exe (Control Agent)(2380) : Initialize of the VPO Control Agent
failed. (OpC30-1036)
Can't lookup servers: Connection request rejected (dce / rpc). (OpC20-108)
Stopping all VPO Agent processes... (OpC30-1192)
```

If you see the this message, start DCE/RPC. Use the startup command file provided with the Agent kit to start both DCE/RPC and the OVO VMS agents:

$ @SYS$MANAGER:OVO$STARTUP

If you prefer to start DCE/RPC and the OVO VMS agents separately, follow these steps:

1. $ @SYS$MANAGER:DCE$RPC_STARTUP

2. $ opcagt -start

3.5   Templates have been corrupted

If communication between the OVO agents and the OVO management server was abnormally disrupted while templates were being distributed or the acknowledgement that the templates were distributed was disrupted, the templates on the VMS system may be corrupt.

Damaged or corrupt templates need to be removed from the VMS system and then new templates pushed from the OVO management server.

Problems with the templates can be observed by typing out the contents of the error log file. If damaged templates exist, messages such as the folowing will be in the error log file:

```
2/16/06 04:28:04 WARNING opcmona.exe (Monitor Agent)(547359587)
[SYS$POSIX_ROOT:[DE.opc.src.c.managed]genmona.c;1:2847]: Unknown monitor
'VMSSPI_SystemBIOrate'. Ignoring received value. (OpC30-613)
```

The error log file can be found in this directory path:

SYS$SPECIFIC:[OVO.VAR.OPT.OV.LOG.OPC]OPCERROR.

You should stop the OVO agents and delete the template files from the VMS system.

1. Stop the OVO Agents on the VMS system:

   $@SYS$STARTUP:OVO$SHUTDOWN

2. Delete the monitor templates:

   $ DELETE SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]MONITOR.;*

3. Delete the message templates:

   $ DELETE SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]MSGI.;*

4. Delete the Log file encapsulator templates:

   $ DELETE SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]LE.;*

   Note that any of the above templates may not have been pushed, so when deleteing you may get the error:

   DELETE-W-SEARCHFAIL, error searching for SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC] LE.;* -RMS-E-FNF, file not found

5. You should also delete the PIDS file as well:

   $ DELETE OVO$ROOT:[var.opt.ov.tmp.opc]PIDS.;

6. Restart the OVO agents: $@SYS$STARTUP:OVO$STARTUP

7. On the OVO server, push the templates to the OpenVMS system

3.6   Mixed-case Text in Messages Can Cause Problems

If you have developed custom templates and those templates are not being sent to the management server, or not being processed by the VMS node, you could have a mixed-case problem.

Try setting the parse style to "extended" on your VMS node:

$ SET PROCESS/PARSE=EXT

The problem could also be in the template itself. For example, instead of the mixed-case "OBJECT FreeSpace", use all upper case "OBJECT FREESPACE."

3.7   VMSSPI not starting

The OVO agents are starting with no errors and the OVO management server is correctly configured, but the VMSSPI will not start. The error message:

"Cannot start VMSSPI: required OVO agents are not running"

Appears on the VMS console.

Some possible items to check are:

- Do you have the correct VMSSPI kit? Check the VMS URL for the latest updates:

   www.hp.com/products/openvms/openviewagent/

- Did you assign templates and push them from the OVO server to the VMS managed node?

  On the VMS node, look in this directory:

  SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]

  for these files:

  MONITOR. MSGI.

  If those files are NOT in the directory, the templates were not successfully pushed from the OVO server. Go back to the server and assign and push the correct templates.

3.8 Templates not being pushed, DNS not resolving name?

When the management server and the managed node are in different domains, often DNS can not resolve the name to an IP address. This can be overridden by changing OPCINFO on the managed node.

Edit OPCINFO on the VMS node and add the OPC_RESOLVE_IP keyword with the address of the management server. For example:

```
In SYS$SPECIFIC:[OVO.OPT.OV.BIN.OPC.INSTALL]OPCINFO.

Add:

OPC_RESOLVE_IP 16.32.80.252 # the address of the OVO management server

OPC_MGMT_SERVER TDC1.ZKO.DEC.COM # the name of the OVO management server
OPC_INSTALLATION_TIME unknown
```

3.9 OpenView Operations for Windows server settings and/or problems

This section describes possible problems when the management server is a Microsoft Windows server.

3.9.1 Duplicate templates/policies - (OpC20-33 and OpC30-633 errors)

On an OVOW server, the error messages:

Multiple objects with name 'VMSSPI_BatchJobMissing' defined. (OpC20-33)

or

Can't update configuration. Continuing with old one. (OpC30-633) Multiple objects with name 'VMSSPI_BatchJobMissing' defined. (OpC20-33)

Where 'VMSSPI_BatchJobMissing' can be any of the VMSSPI policies.

Indicates that there are two sets of Templates/Policies on the VMS node. This is usually caused when switching management servers between OVOU and OVOW. To fix this problem you must delete the OVOU templates on the VMS node.

1. Verify that two server directories exist on the VMS node:

```
$DIR SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC.VPWIN]
   Directory SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC.VPWIN]
   LE.    MONITOR.            MSGI.

and

$DIR SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]
    Directory SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]
    AGENTID.          AGTREG.          LE. MONITOR.         MSGI.
    MANAGEDNODEID.TXT NODEINFO.        VPWIN.DIR
```

Note the existence of LE., MONITOR., and MSGI. in both directories.

2. Delete the templates from the UNIX directory:

```
$DELETE SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]LE.;
$DELETE SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]MSGI.;
$DELETE SYS$SPECIFIC:[OVO.VAR.OPT.OV.CONF.OPC]MONITOR.;
```

3.9.2 Policies need to be refreshed (OVOW server only)

If you accidently delete or otherwise render your VMS policies useless, they can easily be restored on your OVOW server.

1. Go to the cmd prompt on your Windows server (run cmd)

2. Set your directory to the OVO install directory, you need to go to the disk where your OVO server is installed.

    cd\Program Files\HP OpenView\install\OpenVMS

3. Execute the ".bat" file in the directory

    Upload_Policies.bat

This will upload the policies to the correct directories on your OVOW server.

3.9.3 OVOW 7.5 server enables "self-healing"

The OpenView Operations for Windows server assumes all agents support "Self Healing" in the OVO agents. The OpenVMS agents do NOT support "Self Healing". A user of OVOW 7.5 must remove or disable "Self Healing" for the OpenVMS agents. This can be done on the OVOW management server by doing the following:

•   On the Management Server Console, select: Action->Configure->Nodes

•   Open the OpenView Defined Groups->Unix

•   Right-Click the OpenVMS or the OpenVMS(Itanium) group; select Properties

•   Select the Deployment Tab

•   Select the "Self Healing" entry in the listbox and Disable (or Remove) the Autodeployment of the selected group.

This turns off the automatic deployment of the Self Healing Policies.

Note: If the policy was automatically deployed to the OpenVMS managed node BEFORE it was disabled on the management server, you must disable the policy on the OpenVMS node.

Use the opctemplate command on OpenVMS to determine whether the policy is enabled or not:

$ opctemplate -l

Look for this policy:

SCHEDULE "Self-Healing Registration Scheduler" enabled

If it is enabled, disable it:

$ opctemplate -d "Self-Healing Registration Scheduler"

A message similar to the following should be displayed: opctemplate(790627360) : Template Self-Healing Registration Scheduler on node nnnnn.dom.sub.com has been disabled. (OpC30-3006)

3.9.4   When management servers change

When the node name or address or both, of an OVOW Management Server changes the managed nodes have to resychronize with the Server.

Often the user will get a message such as:

(PMD378) Node nodename already managed by another management server.

One possible fix is to do the following from the management server console:

1.   From the HP OpenView tree
2.   Right click on Nodes
3.   Select All Tasks
4.   Select Sychronize Packages
5.   Answer Yes to the "Are you sure you want to synchronize" question

If you changed node names and or addresses on the VMS node and or DNS server changes were made, a reboot of the VMS node is often required.

3.10   Various Configuration Settings on the Management Server (Mostly Unix)

This section describes settings that can be made on the Management Server to change behavior in the Message Browser or how the agents act.

The symptoms that are usually noticed are that messages are not appearing in the message browser, or the VMS node is not "acting" like the Unix nodes.

3.10.1   Agents will not start - Node Not "Controlled"

If the OVO VMS agents will not start, make sure the settings on the Management Server indicate the node is "controlled."

1.   On the Management Server opc_adm account, go to the Node Group bank window.
2.   Select the icon for the group where the VMS node resides (for example, select the hp_ux icon).
3.   Highlight the VMS node in question by single clicking it.
4.   Select the Actions pull down, Node Modify. This should bring up a Modify Node: abcde.domain window.

Midway down that window, Type of Managed Node is listed.

Make sure the "Controlled" radio button is grayed out, which means it is selected and correct.

5. If the node is NOT "Controlled", the best way to fix it is to delete the node and add it back again.

3.10.2 Agents will not start - Node Cannot "Managed"

If the node was added to a group, perhaps it was not recognized properly by the Management Server.

1. On the Management Server, from the opc_adm account, go to the Node Group bank window.

2. Select the icon for the group where the VMS node resides (for example, select the hp_ux icon).

3. Highlight the VMS node in question by single clicking it.

4. Select the Actions pull down, then Node, then Modify... This should bring up a Modify Node: abcde.domain window.

5. Check the Net Type, Machine Type and OS Name. It should be highlighted and should be similar to the following for the selected node:

```
Net Type            Machine Type   OS Name
IP Network          DEC Alpha      OpenVMS
```

3.10.3 Agents running, no messages in browser - Node Not in the Responsibility Matrix

If the OVO VMS agents are running and you have added the VMS node to the Management Server but messages are not being displayed in the Message Browser window, or errors that the node is not managed may indicate that the VMS node is not in the user's "responsibility matrix." To verify the status and add the VMS node to the matrix, do the following: (Note this example is for opc_adm, but it applies to any user.)

1. On the management server, from the "root" screen, select the "window" pull-down.

2. Select the "OVO User Bank" under the window pull-down.

3. Right-click (or single click) on the grouping that needs to be modified.

4. Select Actions, User, Modify... option.

    A Modify User:opc_adm window will pop up.

5. In the lower left corner, click on the Responsibilities button.

    A Responsibilities for Operator [opc_adm] window will pop up.

6. In the Responsibilities for Operator [opc_adm] window, on the left hand side, under Message Groups, use the slide bar to locate OpenVMS. Toggle the OpenVMS button so that the small square under the Node Groups section that corresponds to OpenVMS is highlighted.

7. Click Close and "OK." You can also close the OVO User Bank window at this time.

3.10.4 Heartbeat Polling Messages Not Appearing in the Message Browser

If you are expecting heartbeat polling messages to appear, the heartbeat polling feature must be enabled. This can be done only from the command line on the Management Server. To enable heart beat polling on an HP-UX OV server, execute the following commands:

1. Log into the system as root/superuser.

2. Enable polling by entering:

    opchbp -start your_node.your_domain

    For example, the command

    opchbp -start abcde.zko.dec.com

    will enable polling messages for node abcde

Note: Heartbeat polling does NOT apply to OVOW servers.

4   Hints, Tricks and FAQs

4.1   Adding a VMS Application or Command to the Application Bank

This section describes the steps necessary to have a Management Server execute commands, as an application, on the VMS node.

This information can be found in the Application Integration Guide Edition 5 (Manufacturing part number: B7492-90003; Version A.07.00 dated January 2002), Chapter 3, page 155 ff.

1. Log in to the management console as administrator.

2. Open the Application Bank window.

3. Pull down the Actions menu, and select Application.

4. Click on Add VPO Application. An "Add VPO Application" form will be displayed.

5. Fill in either the Application Name field or the Label field, or both. Words in these fields will appear in the application icon that will be created in the Application Bank window once you have finished creating this application. In the example described below, both these fields contain the string "Type opcinfo."

6. Optionally fill in the Description field. (This field is for informational purposes only.)

7. In the Application Call and Additional Parameters fields, you specify the VMS command and the optional parameters you want executed on the VMS node when an operator invokes this application. For example, the Application Call field might consist of the following string, just as you would enter it on a VMS system:

   type OVO$INSTALL:opcinfo.

   (Note: the final period above is part of the opcinfo file name.)

   Another way of accomplishing the exact same command would be to have the Application Call field consist of the single command:

   type

   The Additional Parameters field would then supply the specification of what is to be typed:

   OVO$INSTALL:opcinfo.

   (Note: In this example, "type" is a DCL verb. Applications are not limited to specifying only DCL verbs; they can invoke their own procedures or images. For a general description of how OpenVMS OVO agents execute OpenVMS command lines, procedures, and images, see the V2.0 Release Notes.)

8. The radio buttons next on the form allow you to specify on which VMS nodes to execute the application, or whether to leave the selection of target nodes to the operator when the application is invoked. In the former case, click the Start On Target Node List button, and in the Target Node List window, supply a list of VMS nodes one per line (for example: mynode.zko.dec.com). In the latter case, click on Start on Target Node(s) Selected by Operator. In this case, the operator shift-selects (highlights) the VMS nodes in the Node Bank window before invoking the application.

9. In the Execute As User field, the User Name field should be SYSTEM. No password is required.

10. After reviewing this form, click OK. The application icon should show up in the Application Bank window. For help on organizing the icons in this window, see the on-line help available for the Application Bank window.

11. To modify an application after it is created, left-click (highlight) the application in the Application Bank window. Right-click and select the "Modify" option.

4.2 What Processes Should be Running for the OVO VMS Agent?

To determine what OVO processes are running on your VMS system, enter this command:

$ SHOW SYSTEM/PROC=OVO$*

If policies/templates have not been pushed, the following processes should be running at a minimum:

```
OpenVMS V7.3-2  on node ABCDE   FEBRUARY 23, 2005 01:46 PM  Uptime  61 23:10:50
  Pid     Process Name    State  Pri     I/O       CPU       Page flts  Pages
42834AD3 OVO$OPCCTLA      HIB     6      786    0 00:00:00.19     819     990
428346D4 OVO$OPCMSGA      HIB     6      527    0 00:00:00.12     659     822
428346D5 OVO$OPCACTA      HIB     4      192    0 00:00:00.07     369     493
```

If all templates/policies have been pushed from the Management Server, the following processes should be running:

```
OpenVMS V7.3-2  on node ABCDE   FEBRUARY 23, 2005 01:41 PM  Uptime  61 23:11:12
  Pid     Process Name    State  Pri     I/O       CPU       Page flts  Pages
42000ECC OVO$OPCCTLA      HIB     6    95713    0 00:01:06.88    1045     682
42000EDB OVO$OPCMSGA      HIB     5  1231536    0 00:12:25.20    1668     386
42000EDC OVO$OPCACTA      HIB     5  1312433    0 00:12:13.72     442     267
42000EDD OVO$OPCMONA      HIB     5  6709553    0 00:58:11.87     974     240
42000EDE OVO$OPCMSGI      HIB     5  1233239    0 00:13:17.00     589     319
42000EDF OVO$OPCLE        HIB     5  1200200    0 00:12:10.25     323     200
```

4.3 What Smart Plug-in Processes Should Be Running?

To determine what VMSSPI processes are running on your VMS system, enter this command:

$ SHOW SYSTEM/PROCESS=VMSSPI*

If you have pushed all templates/policies from the Management Server AND the system security audit server is enabled and running, the following processes should be running:

```
OpenVMS V7.3-2  on node ABCDE   FEBRUARY 23, 2005 01:52 PM  Uptime  61 23:22:33
  Pid     Process Name    State  Pri     I/O       CPU       Page flts  Pages
42001134 VMSSPI$SYSTEM    LEF     5      238    0 00:00:00.15     427     527
42001135 VMSSPI$PERFORM   LEF     5      969    0 00:00:00.65     600     458
42001136 VMSSPI$SECURITY LEF     12      294    0 00:00:00.23     423     564
```

4.4   Some Useful Commmand Line Commands

This section provides some examples of commands that can be entered on the VMS node to perform various actions.

NOTE: For these commands to work, you must invoke the following command file from the system account:

$ @SYS$MANAGER:OVO$DEFINE_COMMANDS

4.4.1   To Stop the Agents

Enter the following command:

$ opcagt -kill (or -stop)

This command stops all agents on the VMS node.

4.4.2   To start the agents

Enter the following command: $ opcagt -start

This command starts the agents on the VMS node.

4.4.3   Too see if the agents are running?

Enter the following command:

$ opcagt -status

This command shows the status of the ovoagents, for example:

```
$ opcagt –status

VPO Managed Node status :
------------------------
Control Agent        OVO$SYSTEM:opcctla.exe            (1107300739) is running
Message Agent        OVO$SYSTEM:opcmsga.exe            (1107300740) is running
Subagent 1:
Action Agent         OVO$SYSTEM:opcacta.exe            (1107300741) is running
Monitor Agent        OVO$SYSTEM:opcmona.exe            (1107300742) is running
Message Interceptor  OVO$SYSTEM:opcmsgi.exe            (1107300743) is running
```

4.4.4   To show the enabled templates

Enter the following command:"

$ opctemplate

This command lists the templates that are enabled, for example:

```
$ opctemplate
VPO Enterprise templates (from VPO server on UNIX) :
-------------------------------------------------------------------------
OPCMSG       "VMSSPI_AUDSRV_Audit" enabled
OPCMSG       "VMSSPI_AUDSRV_AuditServer" enabled
OPCMSG       "VMSSPI_AUDSRV_BreakIn" enabled
OPCMSG       "VMSSPI_AUDSRV_Connection" enabled
OPCMSG       "VMSSPI_AUDSRV_Install" enabled
OPCMSG       "VMSSPI_AUDSRV_Logfailure" enabled
OPCMSG       "VMSSPI_AUDSRV_Login" enabled
OPCMSG       "VMSSPI_AUDSRV_Logout" enabled
OPCMSG       "VMSSPI_AUDSRV_Mount" enabled
OPCMSG       "VMSSPI_AUDSRV_NCP"  enabled
OPCMSG       "VMSSPI_AUDSRV_Netproxy" enabled
OPCMSG       "VMSSPI_AUDSRV_ObjectAccess" enabled
OPCMSG       "VMSSPI_AUDSRV_ObjectCreate" enabled
OPCMSG       "VMSSPI_AUDSRV_ObjectDelete" enabled
OPCMSG       "VMSSPI_AUDSRV_Process" enabled
OPCMSG       "VMSSPI_AUDSRV_Rightslist" enabled
OPCMSG       "VMSSPI_AUDSRV_Sysgen" enabled
OPCMSG       "VMSSPI_AUDSRV_Systime" enabled
OPCMSG       "VMSSPI_AUDSRV_Sysuaf" enabled
OPCMSG       "VMSSPI_ActiveCPU"   enabled
OPCMSG       "VMSSPI_BatchQueue"  enabled
OPCMSG       "VMSSPI_ClusterMemberAdded" enabled
OPCMSG       "VMSSPI_ClusterMemberRemoved" enabled
OPCMSG       "VMSSPI_DiskState"   enabled
OPCMSG       "VMSSPI_FreeSpace"   enabled
OPCMSG       "VMSSPI_HardwareError" enabled
OPCMSG       "VMSSPI_Intruder"    enabled
OPCMSG       "VMSSPI_LANCarrierCheckFailures" enabled
OPCMSG       "VMSSPI_MemberState" enabled
OPCMSG       "VMSSPI_NPAGEDYN"    enabled
OPCMSG       "VMSSPI_PendingJobs" enabled
OPCMSG       "VMSSPI_PrintQueue"  enabled
OPCMSG       "VMSSPI_ProcessLooping" enabled
OPCMSG       "VMSSPI_ProcessOccurrences" enabled
OPCMSG       "VMSSPI_ProcessState" enabled
OPCMSG       "VMSSPI_QueueManager" enabled
OPCMSG       "VMSSPI_Quota_ASTLM" enabled
OPCMSG       "VMSSPI_Quota_BIOLM" enabled
OPCMSG       "VMSSPI_Quota_BYTLM" enabled
OPCMSG       "VMSSPI_Quota_DIOLM" enabled
OPCMSG       "VMSSPI_Quota_ENQLM" enabled
OPCMSG       "VMSSPI_Quota_FILLM" enabled
OPCMSG       "VMSSPI_Quota_PGFLQUOTA" enabled
OPCMSG       "VMSSPI_Quota_PRCLM" enabled
OPCMSG       "VMSSPI_Quota_TQELM" enabled
OPCMSG       "VMSSPI_RetainedJobs" enabled
OPCMSG       "VMSSPI_SecurityServer" enabled
OPCMSG       "VMSSPI_ShadowSetState" enabled
OPCMSG       "VMSSPI_Started"     enabled
```

```
MONITOR         "VMSSPI_BatchJobMissing" enabled
MONITOR         "VMSSPI_BatchQueueNotStarted" enabled
MONITOR         "VMSSPI_BatchQueueNotStopped" enabled
MONITOR         "VMSSPI_CPUutilization" enabled
MONITOR         "VMSSPI_ComputableProcesses" enabled
MONITOR         "VMSSPI_DIOrate"    enabled
MONITOR         "VMSSPI_DiskNotAvailable" enabled
MONITOR         "VMSSPI_DiskQueueLength" enabled
MONITOR         "VMSSPI_DiskWriteLocked" enabled
MONITOR         "VMSSPI_Hotfile"    enabled
MONITOR         "VMSSPI_LANutilization" enabled
MONITOR         "VMSSPI_MemoryUtilization" enabled
MONITOR         "VMSSPI_MissingMember" enabled
MONITOR         "VMSSPI_PageFileFreeSpace" enabled
MONITOR         "VMSSPI_ProcessMissing" enabled
MONITOR         "VMSSPI_ProcessSlots" enabled
MONITOR         "VMSSPI_ReshashtblDense" enabled
MONITOR         "VMSSPI_ReshashtblSparse" enabled
MONITOR         "VMSSPI_ShadowSetMissing" enabled
MONITOR         "VMSSPI_SwapFileFreeSpace" enabled
MONITOR         "VMSSPI_SystemBIOrate" enabled
MONITOR         "VMSSPI_SystemDIOrate" enabled
MONITOR         "VMSSPI_SystemPageFaultRate" enabled
```

This command can also enable and disable templates. Use the -h option for details.

4.4.5 To send a message to the Management Server

The opcmsg command can be used to send a message from VMS to the Management Server. This command can be useful in testing the communication between the client and server.

NOTE: you **MUST** assign and push the "default" message template (on OVOU) for this command to work. Select and push the following template:

Message opcmsg(1 | 3) default interception of messages submitted by opcmsg(1) and opcmsg(3)

For OVOW, select Policy Groups, Samples and deploy the policy:

FwdMsgToNotificationSystem

The following for example:

$ opcmsg sev=minor appl=VMStest obj=VMStest msg_text="testing 123"

Will send the message "testing 123" to the Management Server. The quotes are required in the command line.

Don't forget to define the OVO commands:

$ @SYS$SYSROOT:[SYSMGR]OVO$DEFINE_COMMANDS.COM

APPENDIX   A

APPENDIX A - USEFUL BOOKS, URLS, ETC

This appendix contains references to various URLs and books that can be very useful in troubleshooting the OVO agents.

A.1   System management guide

OpenVMS System Management Guide, Second Edition provides a very extensive look at VMS system management. Authors: Lawrence L. Baldwin, Jr., Steve Hoffman and David Donald Miller. The ISBN number is: 1-55558-243-5. It is published by Elsevier Digital Press.

A.2   Unix commands for VMS users

UNIX for OpenVMS Users, Second Edition provides a "mapping" between VMS commands and UNIX commands. If you know VMS you can find the UNIX command and vise versa. Authors: Philip Bourne, Richard Holstein and Joseph McMullen. Published by Digital Press. The ISBN number is: 1-55558-155-2.

A.3   Location of current VMS kits

The OpenVMS engineering team provides updates to the OVO agent and VMSSPI via the VMS web site. The URL for the web site is:

http://h71000.www7.hp.com/openvms/products/openvms_ovo_agent/index.html

Check the "updates" section on this page for current kits.

Note: if this URL does not work, go to the HP OpenVMS Systems main web page and look under OpenVMS system management for the OVO agents for OpenVMS.

A.4   Troubleshooting firewalls

Troubleshooing firewall configurations is an art in itself. Troubleshooting firewalls and port mapping are too extensive to cover in this document. An excellent source of information for firewall and port mapping issues is:
http://www.managementsoftware.hp.com/products/ovowin/twp/ovowin_twp_firewall.pdf