Unicenter System Watchdog™ for OpenVMS

Administration Guide

r2.4 SP3

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Preface

Overview

Welcome to Unicenter System Watchdog for OpenVMS which includes the components Watchdog Manager and Watchdog Agent. Throughout this guide, we use the component name Watchdog Manager in our discussion. See the section Updated Terminology in the "Introduction" chapter for more information about terms.

The Watchdog Manager and Watchdog Agent software provides the capabilities required to monitor multiple systems from one terminal. Watchdog Manager allows users to identify and correct problems that can occur in a domain of OpenVMS systems connected by a DECnet network.

The following table shows the platforms supported for this version of Watchdog Manager:

Operating System	Hardware	Minimum Version Number
OpenVMS	VAX	6.2, 7.3
OpenVMS	Alpha	6.2, 7.3, 7.3-x, 8.2

This guide describes the Watchdog Manager software systems. Watchdog Manager enables OpenVMS system operators and managers to monitor multiple systems for potential problems and to correct the problems as soon as possible.

You can use TCP/IP UCX version 3.2, Process Software MultiNet version 4.0B, or Process Software TCPware version 5.3 to support wide area networks.

Purpose of This Guide

This document describes the Watchdog Manager systems. This guide explains how to:

- Create and modify profiles using the profile editor commands and facilities.

- Start up Watchdog Manager processes using the defined profiles.

- Manage Watchdog Manager processes using the controller commands.

Intended Audience

This document is for personnel who use the Watchdog Manager software for system support in an OpenVMS cluster or OpenVMS system environment.

Structure of This Document

This document provides the following information:

- Chapter 1, Watchdog Manager, introduces the software components and describes the tasks for managing consolidator processes and event message displays.

- Chapter 2, Event Descriptions, describes the events and event codes that are monitored and reported by the Watchdog Manager software.

- Chapter 3, Controller Commands, describes the commands used for managing Watchdog Manager processes and event message displays.

- Chapter 4, Profile Management, provides guidelines for creating and editing profiles using the profile editor commands.

- Chapter 5, Profile Editor Commands, describes the terminal keyboard commands used to create, configure, and modify profiles.

- Chapter 6, Profile Editor Windows, provides guidelines for creating and editing profiles on a DECwindows Motif display and describes the profile editor window elements.

- Chapter 7, User Programming, provides guidelines for developing and using action routines and VMS mailbox reader programs.

- Appendix A, Controller Command Summary, provides a summary of the online controller commands and qualifiers.

■ Appendix B, Profile Editor Command Summary, provides a summary of the online profile editor commands and qualifiers.

■ Appendix C, Logical Names Used by Watchdog Manager, provides a list of logical names used by the product.

■ Appendix D, Hints and Tips for Using Watchdog Manager, provides information to help you customize and use Watchdog Manager.

■ Appendix E, Watchdog Manager Callable Interface

■ A Glossary and an Index are provided at the end of this manual.

Related Unicenter Systems Watchdog for OpenVMS Documents

The following documents complete the documentation set:

■ *Unicenter Systems Watchdog for OpenVMS Installation Guide*

■ *Unicenter Systems Watchdog for OpenVMS Readme*

Conventions

Convention	Meaning
UPPERCASE	Uppercase letters indicate the name of a command, a file, a procedure, or utility.
user input system	In interactive examples, this typeface indicates input entered by the user, a system prompt, or displayed system text.
$	The dollar sign is used to indicate the DCL prompt. This prompt may be different on your system.
Ctrl+X	In procedures, a sequence such as Ctrl+X indicates that you must press the key labeled CTRL while you press another key or pointing device button.

Introduction

Overview

Unicenter System Watchdog for OpenVMS provides tools that help operations personnel manage computer-related problems that can occur in a data center; it makes it possible for operators and system managers to monitor multiple system activities from one terminal, identify potential problems, and correct the problems as soon as possible.

The following software is required:

- *Watchdog Manager* must be in place on the local system where all nodes are to be monitored.

- *Watchdog Agent* must be running on all nodes that are to be monitored.

Updated Terminology

Unicenter System Watchdog for OpenVMS is built on previous successful releases of system monitoring software. As products evolve, naming conventions and references change.

To make sure that the terminology is easily understood, we've created the following table to show you terms or phrases used in prior releases, and their new or updated equivalents.

Original Terminology	Current Terminology
■ WATCHIT Manager	Watchdog Manager or Consolidator
■ Event Manager (from TNG for OpenVMS)	
■ System Watchdog Manager	
■ Consolidator	
■ WATCHIT Agent	Watchdog Agent or Agent
■ System Monitor (from TNG for OpenVMS)	
■ System Watchdog Agent	
■ Agent	

Watchdog Manager Functions

The Watchdog Manager does the following:

■ Monitors systems from a central OpenVMS node and informs support personnel about system or network problems that require intervention.

■ Invokes user-implemented corrective actions when events are added, updated, or removed.

■ Enables users to tailor system monitoring for a site or for individual users by assigning different classes of coverage. Users can assign a priority for each event and define important events for monitoring a specific set of processors.

■ Provides an external interface so events not detected by the Watchdog Manager can be monitored by user-written software or command procedures and reported to the Watchdog Manager software.

■ Uses OpenVMS mailbox or DECtalk sets to report abnormal conditions or invoke action routines to correct software-related problems.

Software Components

The following illustration shows the interactions between the components of the Unicenter System Watchdog for OpenVMS software.

Watchdog Manager Processes and Functions
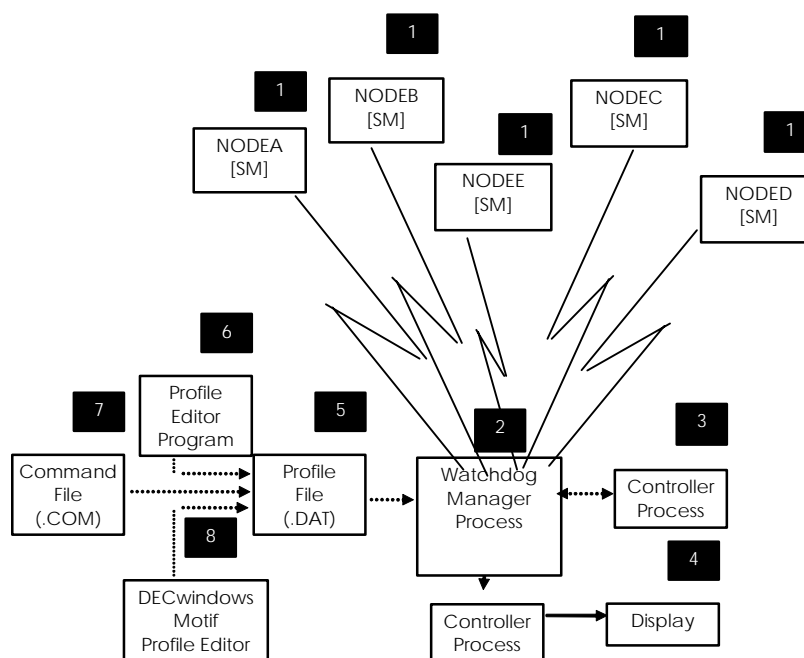
In the illustration, nodes A through E (NODEA through NODEE) are shown being monitored by the local Watchdog Manager process. Each node is running a Watchdog Agent as a detached process. Solid lines indicate ongoing operations, such as the continuous event message display controlled by the Watchdog Manager process. Dotted lines indicate interactive user operations, such as creating a profile or communicating with a Watchdog Manager process. The components shown for the Watchdog Agent are as follows:

1. **Watchdog Agent Process**

   The Watchdog Agent runs as a detached process on each OpenVMS node that is being monitored. Each Watchdog Agent maintains a list of event messages for abnormal conditions and responds to requests for event messages from one or more Watchdog Manager processes.

2. **Watchdog Manager Process**

    The Watchdog Manager runs as a detached process that periodically polls all active Watchdog Agents and requests the currently active event messages. The Watchdog Manager can display a continuous screen of event messages and invoke action on abnormal events using the notification options (action routine sets, DECtalk sets, or OpenVMS mailbox outputs). The Watchdog Manager monitors network status independently of the Watchdog Agents and responds to maintenance or display requests from one or more controller processes.

3. **Controller Process**

    The controller runs as an interactive online process that enables operators and system managers to:

    ■   Display event messages

    ■   Add and delete external messages

    ■   Start and stop Watchdog Manager (Consolidator) processes

    ■   Modify Watchdog Manager processes to change operating parameters or node coverage

4. **Event Message Display**

    A video display terminal is required for displaying the currently active event messages. After polling the active Watchdog Agent processes, the Watchdog Manager can update a continuous display process for new, updated, or removed events.

5. **Profile File**

    A profile is a data file that defines the nodes to be monitored and the types of actions and notifications to be invoked when an abnormal event occurs. When a Watchdog Manager process is started, it reads and stores the operating parameters from the specified profile.

    A valid profile must be in place when you start a Watchdog Manager process. The default profile SNS$PROFILE.DAT can be customized or you can create your own profiles. You can then specify a different profile each time you start a Watchdog Manager process.

Profiles can be created, modified, or customized by using the profile editor commands, an executable command file of profile editor commands, or the profile editor windows facility.

6. **Profile Editor Commands**

   Users can create or edit profiles by entering profile editor commands from the terminal keyboard.

7. **Executable Command File**

   Users can create or edit profiles by executing a command file that contains profile editor commands.

8. **Profile Editor Windows**

   Users can create or edit profiles by selecting command functions on a DECwindows Motif display.

   Shareable Image File

   The shareable image file SNS$SHR.EXE (not shown in the above figure) enables users to invoke user-created applications that add or remove external messages from the lists of event messages maintained by the Watchdog Agent processes.

Watchdog Manager Polling Sequence

The Watchdog Agent periodically scans device and data structures on the system. If an abnormal condition appears, the agent adds an event message to a local list of messages. If the abnormal condition disappears, the agent removes the message. Any Watchdog Manager process that polls the active agents at regular intervals can read the list of messages.

Multiple Watchdog Manager processes can be running to provide different levels of coverage for systems or events. Each Watchdog Manager maintains a list of event messages for all polled agents and writes event status changes and notifications to a log file. A Watchdog Manager can invoke action routines and OpenVMS mailbox messages for new, updated, or removed event messages, and can invoke DECtalk calls for new or updated event messages.

Single Event Message Display

The following figure, Single Event Message Display, shows a sample of the information listed by a single event message display request by the operator. The display lists events according to the parameters and default values defined in the profile.

Single Event Message Display

Continuous Event Message Display

The following figure shows a sample of the information displayed by the continuous event message display. The display is periodically updated by the Watchdog Manager process which lists events according to the parameters and default values defined in the profile. If the message list is long, the continuous display provides more than one screen that can be selected by pressing the Next Screen and Prev Screen keys. (The left and right arrow keys have the same function as the Next Screen and Prev Screen keys.) Press function key F10 or enter Ctrl+Z to cancel the display and return to the prompt.

Continuous Event Message Display

```
                          DECterm 2
 File   Edit   Commands   Options   Print                          Help

                   09-JUL-2005 09:47
                 ─High-priority Messages─
  9-JUL 09:42 RETAW  Batch DISK$FULL in queue SYS$BATCH (User SYSTEM) is missin
  9-JUL 09:42 RETAW  Batch PURGEDISK in queue SYS$BATCH (User SYSTEM) is missin
  8-JUL 17:18 YQUEM  Process PURGEDSK with UIC=[1,4] is missing
  8-JUL 17:14 YQUEM  Process NOT_ON_YQUEM with UIC=[1,4] is missing

                 ─Low-priority Messages. Frame 1 / 2─
  9-JUL 09:40 RETAW  Time differs from local time by -0 00:59 (days hh:mm)
  8-JUL 17:14 VINO   Warning: NOT_SHADOW is not a shadow set
  8-JUL 17:14 VINO   Disk MOSEL has less than 15% (~356422) free blocks
  8-JUL 17:14 VINO   Disk BELLET has less than 15% (~441142) free blocks
  7-JUL 12:30 DV3    Warning: HPSXXX is not a printer queue
  7-JUL 12:30 DV3    Warning: DUXX is not a disk
  6-JUL 17:18 RETAW  Disk DISK$ALPO has less than 28% (~4354) free blocks
  6-JUL 17:14 YQUEM  Disk DISK$USER has less than 12% (~32621) free blocks
  4-JUL 17:14 YQUEM  Batch queue YQU$MOLSON (On node YQUEM) is stopped
  4-JUL 16:20 YQUEM  Batch queue LAT$LATOUR (On node LATOUR) is stopped
  1-JUL 16:20 GALLO  Process NOT_ON_GALLO with UIC=[1,4] is missing
  1-JUL 14:57 LATOUR Process NOT_ON_LATOUR with UIC=[1,4] is missing
  1-JUL 09:18 HELDOG Connection status: remote node is not currently reachable

                                            Waiting next scan...
```

Event Types

An event is a problem that the Watchdog Manager can detect, such as an increase in the number of CPU errors or disk errors, or a node that becomes unreachable over the network. Chapter 2 provides detailed descriptions of the built-in events and event codes.

When the Watchdog Manager detects an event or receives an event message, it initiates appropriate action as defined in the profile. Each event can be assigned a priority level and can invoke an action routine, initiate a DECtalk call, or send a OpenVMS mailbox message with the severity level.

The Watchdog Manager software monitors and detects the following types of events:

■ Network Events

 Network events are related to network connections, such as whether a node is reachable or unreachable over DECnet or TCP/IP.

■ System/Process Events

 System/Process events are related to the system, such as CPU, memory, or device errors, or to processes, such as the existence of specific processes or batch jobs.

■   External Events

External events are reported to the Watchdog Agent with user-supplied text by external procedures or software. External messages can be added for events not detected by the Watchdog Manager software, but which come from external DCL procedures or user applications that call the shareable image. External events can also invoke corrective actions and notification options.

Priority Levels

Each event can be assigned one of four priority levels:

■   **High —** Occurrences of a high priority event are shown in the high-priority list or display window.

■   **Low —** Occurrences of a low priority event are shown in the low-priority list or display window.

■   **Not checked —** The event is not monitored.

■   **Not displayed —** The event is monitored but occurrences are not displayed.

Notification Options

In addition to the continuous event display, notification options can provide the means for taking action or notifying personnel about system or network problems. Each class can have all three notification options defined in the profile.

■   Action Routine Sets

An action routine set can invoke a user-written program or procedure to correct a software-generated problem.

■   DECtalk Sets

A DECtalk set can initiate a call through a DTC01 or DTC03 DECtalk option to a specified telephone number. The set can deliver a computer-generated voice message to a person or recording device or generate a OpenVMS mail message to a responsible party.

■   Mailbox Sets and Severity Levels

A mailbox set can send an event packet to a standard OpenVMS mailbox for action required by a user, application, or another product. A user-written mailbox reader program must be in place to read the message and display it, forward it, or initiate a DECtalk call to a responsible party.

The mailbox message includes the specified severity level for the event:

- Information

- Success

- Error

- Warning

- Fatal

Chapter 7 provides information for writing action routines and mailbox reader programs.

Classes of Event Coverage

You can define different classes of coverage in a profile to provide selective polling and display of built-in and external events. You then specify the profile for the Watchdog Manager to use when you start the Watchdog Manager process.

Event Classes

An event class is a collection of built-in events that the Watchdog Manager software can monitor. One class can be assigned to define an OpenVMS cluster system or several connected systems. Several classes can be used to define groups of systems or different levels of coverage, such as nodes running critical applications or nodes used for program development.

Each event in an event class lists the priority level, action routine set, DECtalk set, and mailbox set with severity level.

External Message Classes

Classes can be assigned for external messages. An external message class defines a list of external message match strings for events not detected by the Watchdog Manager software but which come from external DCL procedures or user applications that call the shareable image.

Each external message match string lists the priority level, action routine set, DECtalk set, and mailbox set with severity level.

Getting Started with Watchdog Manager

This section provides exercises to help you get started using the Watchdog Manager. Descriptions and examples provide the syntax for the Watchdog Manager editing and operating commands.

The following are required to use the exercises:

- A Watchdog Agent must be running on the system running the Watchdog Manager and on all other systems that are to be monitored.

- You must have TMPMBX and NETMBX privileges, plus OPER, SYSPRV, or SETPRV privileges to add and delete external messages.

Creating a Profile

The following steps show how to create and add entries to a basic profile:

1. **Create a Profile Directory**

   A subdirectory is helpful for keeping all of your profiles, log files, and other related files in one area.

   You can create a subdirectory for the profile and set your default as follows:

   ```
   $ CREATE /DIRECTORY [.PROFILES]
   $ SET DEFAULT [.PROFILES]
   ```

2. **Open a Profile**

   Enter the profile editor program and create a basic profile as follows:

   ```
   $  SENSE WATCH EDIT PROFILE START
   ```

   The EDIT PROFILE command opens an editing session on the profile START.DAT and returns the SNS$EDIT> profile editor prompt. For a new profile, the system response is similar to the following:

   ```
   %SNS-E-PRONOTFOUND, Profile START.DAT not found %SNS-I-PROCREAWAIT, Creating
   new profile, please wait ...

   SNS$EDIT>
   ```

3. **Add an Event Class**

   The event class determines how the Watchdog Manager handles the built-in events for nodes that are members of the class. If you do not add an event class, the profile editor assigns all entries to the default class DEFAULT.

   You can add an event class as follows:

   ```
   SNS$EDIT> ADD CLASS START
   ```

   You can then display the default values in event class START as follows:

   ```
   SNS$EDIT> SHOW CLASS START
   ```

The system responds with an informational list similar to the following:

```
Class : START Event       Priority      Options
CPU CPU errors            High
MEM Memory errors         High
DSK Disk errors           High
ETH Ethernet errors       High
HSC HSC problems          High
CIC CI cable problems     High
PRS Printers stalled      Low
LOP Processes looping     High
DNF Disk near full        High
SHS Shadow set Problems   High
DSS Disk state Problems   High
DQP Device queue problems <- Not checked
BQP Batch queue Problems  <- Not checked
QCP Queue manager Problems High
PRO Missing Processes     High
BAT Missing Batchjobs     High
ILL Login limits too low  High
SMP Processors stopped    High
UNR Nodes unreachable     High
ORS Nodes out of resources High
UNK Nodes unknown         Low
TIM Time consistency      Low
WDM No SNS server         Low
OTH Connection Problems   Low
SNS SNS internal messages Low
SWL Software write locked  Low
DMM Disabled memory       Low
VAL Validation error      Low
```

4. **Add an External Message Class**

The external message class determines how the Watchdog Manager handles external events for nodes that are members of the class. If you do not add an external message class, the profile editor assigns all entries to the default class DEFAULT.

You can add an external message class as follows:

```
SNS$EDIT> ADD EXTERNAL_MESSAGE_CLASS START
```

You can then display the default values in the external message class START as follows:

```
SNS$EDIT> SHOW EXTERNAL_MESSAGE_CLASS START
```

The system responds with an informational message similar to the following:

```
External messages class : START

  Match String           Priority            Options
  1  *                     Low
```

In the preceding message, the Watchdog Manager compares the text of an external message to the match string * character. Because * is a wildcard, all external event messages match and are issued a display priority of Low.

5. **Add a Node**

    The ADD NODE command adds a node to be polled to the profile. If you do not specify an event class, the profile editor assigns the node to event class DEFAULT. If you do not specify an external message class, the profile editor assigns the node to external message class DEFAULT.

    Add a node to the profile and show the default values as follows:

    ```
    SNS$EDIT> ADD NODE ALPHA /CLASS=START /EXTERNAL_MESSAGE_CLASS=START

    SNS$EDIT> SHOW NODE ALPHA
    ```

    The system response is similar to the following:

    ```
    Node : ALPHA
    Class           : START
    External class  : START
    Time difference : +00:00:00
    Transport       : DECNET
    DFS event codes :

    SNS$EDIT> EXIT
    ```

    The preceding system response indicates that a profile has been created with the node ALPHA assigned to event class START and to external message class START. The EXIT command then stores the profile START.DAT and leaves the editing session.

    Note: Each node must be added separately. Cluster aliases cannot be used. The Watchdog Manager uses DECnet to individually connect with each node and request event information.

Running a Watchdog Manager Process

The following steps show how to start and control a Watchdog Manager process:

1. **Set Your Privileges**

    Your process must have both TMPMBX and NETMBX privileges to use the ADD MESSAGE or DELETE MESSAGE commands. The process must also have OPER, SYSPRV, or SETPRV privileges.

    The following command enables the OPER privilege:

    ```
    $ SET PROCESS /PRIVILEGE=OPER
    ```

2. **Invoke the Controller Program**

    Invoke the controller program as follows. The program returns the SNS> controller prompt.

    ```
    $ SENSE WATCHDOGS
    SNS>
    ```

3. **Start the Watchdog Manager**

   Start a Watchdog Manager process and specify the new profile START as follows:

   ```
   SNS> START CONSOLIDATOR /PROFILE=START
   ```

   The system response is similar to the following:
   ```
   %SNS-I-PROREADWAIT, Reading profile, please wait ...
   %SNS-I-CONSSTARTED, Watchdog Manager has been started, Id is 8985
   SNS-I-CONSPID, The Watchdog Manager PID is 00000305
   ```

4. **Enable Writing to a Log File**

   The ENABLE LOG command enables the Watchdog Manager to write log entries to a log file.

   Enable the log file to be generated as follows:

   ```
   SNS> ENABLE LOG
   ```

   The system response is similar to the following:

   ```
   SNS-I-NEWLOG, No logfile found. Creating a new one.
   ```

   The Using the SHOW Command section shows a sample of the information contained in the log file.

5. **Display Event Messages**

   The SHOW EVENTS command displays the current event messages maintained by the Watchdog Manager process that you have started.

   You can display the current event messages as follows:

   ```
   SNS> SHOW EVENTS
   The system response is similar to the following:
   *** LOW Priority messages ***
    No messages.
   *** HIGH Priority messages ***
    No messages.
   ```

   If the Watchdog Agent detects an event and the event class the node is assigned to has the message display enabled, the event message is listed where the "No messages" text is currently listed in the preceding display.

6. **Add an External Message**

   The ADD MESSAGE command adds a message to the external message list maintained by the Watchdog Agent on the local system. You can add messages to provide coverage for events not detected by the Watchdog Agent but which are reported by a DCL procedure.

   Add an external message to your local node as follows:

   ```
   SNS> ADD MESSAGE "START-Test"
   ```

7. **Use the POLL Command**

   The POLL command instructs the Watchdog Manager to immediately poll the Watchdog Agents on all enabled nodes in the profile. (The Watchdog

Manager polls the Watchdog Agents at regular intervals independently of the POLL command.)

You can poll enabled nodes in the profile as follows:

```
SNS> POLL
```

You can then enter the following command to display a single screen of event messages:

```
SNS> SHOW EVENTS
```

The system response is similar to the following:

```
*** LOW Priority messages
***23-JUL 13:05 ALPHA  START-Test
*** HIGH Priority messages ***
No messages.
```

8. **Set the Watchdog Manager Polling Interval**

The SET POLLING_INTERVAL command sets the Watchdog Manager time interval for polling and notification operations.

You can set a polling interval of 5 minutes (300 seconds) as follows:

```
SNS> SET POLLING_INTERVAL 300
```

Modifying a Profile and Reconfiguring the Watchdog Manager

The following steps show how to modify a profile, then reconfigure a running Watchdog Manager process to use the updated profile:

1. **Add an Action Routine Set**

An action routine set invokes a user-written program or procedure that can correct a problem.

Enter the profile editor program, add an action routine set to send mail, then display the set as follows:

```
$ SENSE WATCHDOGS EDIT PROFILE
SNS$EDIT> ADD ACTION_ROUTINE_SET SEND_MAIL /MODE=SPAWN -
SNS$EDIT> /COMMAND="MAIL NL: SMITH /SUBJ="|P1""
SNS$EDIT> SHOW ACTION_ROUTINE_SET SEND_MAIL
```

For the /SUBJ qualifier, the P1 parameter after the vertical bar (|)causes the event message text to be substituted in the subject of the mail message.

The preceding commands generate an output similar to the following:

```
Action routine set : SEND_MAIL
Action routine mode : SPAWN
OpenVMS command      : MAIL NL: SMITH/SUB="|P1"
Logfile name      :
Logfile switch    : OFF
```

2. **Modify an Event Class to Include the Action Routine Set**

Modify event class START to include the action routine set SEND_MAIL as follows:

```
SNS$EDIT> MODIFY CLASS START /EVENT_CODE=PRO
/ACTION_ROUTINE_SET=SEND_MAIL
```

You can then demonstrate the action routine set SEND_MAIL by forcing a missing process event message for a nonexistent process as follows:

```
SNS$EDIT> ADD NODE ALPHA PROCESS NOT_A_PROCESS /INTERVAL=0:0:0
SNS$EDIT> EXIT
```

When you reconfigure the Watchdog Manager in the next step, the event message will be sent because the process NOT_A_PROCESS with a default UIC of [1,4] does not exist on the node. However, if a process called NOT_A_PROCESS with a default UIC of [1,4] does exist, the event message will not display and the action routine will not be invoked.

3. **Reconfigure the Watchdog Manager**

   Update the Watchdog Manager's internal data structure for specific event monitoring as follows:

   ```
   $ SENSE WATCHDOGS RECONFIGURE
   ```

   The system response is similar to the following:

   ```
   $%SNS-I-RECONFINPROG, Reconfiguration in progress...
   %SNS-I-PROREADWAIT, Reading profile, please wait ...
   New mail on node ALPHA from ALPHA::SMITH
   ```

   The new mail message shows that the action routine has been executed.

   Enter the SENSE SHOW EVENTS command at this point to generate the following system response:

   ```
   *** LOW Priority messages
   ***23-JUL 13:05 ALPHA START-Test
   *** HIGH Priority messages ***
   23-JUL 13:11 ALPHA  Process NOT_A_PROCESS with UIC=[1,4] is missing.
   ```

   When you enter the mail facility at the DCL prompt, the system responds with messages similar to the following:

   ```
   $ MAIL

   You have 1 new message.
   MAIL> READ

   #1        23-JUL-2000 13:11:53.93                       NEWMAIL
   From: ALPHA::SMITH
   To:   SMITH
   CC:
   Subj: 23-JUL 13:11 ALPHA  Process NOT_A_PROCESS with UIC=[1,4] is missing

   MAIL> EXIT
   ```

Using the SHOW Commands

This section describes how the SHOW commands can be used to display the current system and Watchdog Manager conditions.

SHOW CONSOLIDATOR Command

The SHOW CONSOLIDATOR command reports information about the current Watchdog Manager process.

You can generate a report for your Watchdog Manager process as follows:

```
$ SENSE WATCHDOGS SHOW CONSOLIDATOR /FULL
```

The /FULL qualifier shows full information for the Watchdog Manager process. The /BRIEF qualifier shows only the assigned Watchdog Manager number and the informational message provided with the /INFORMATION qualifier in the START WATCHDOG MANAGER command.

The system response is similar to the following:

```
Controller       : V2.4-0510

Watchdog Manager   : 8985 V2.4-0510
Profile          : DKA300:[SMITH.START]START.DAT;2
Log file         : DKA300:[SMITH.START]SNS$LOG.DAT;1  Enabled
Action routines  : Enabled
DECtalk          : Enabled
Mailbox          : Enabled
Polling interval : 300
Before setting   : Not specified
Since setting    : Not specified
Watchdog information:
   Node    Status   Class             Version  OS Version
   ALPHA   Enabled  START             V2.4-0510 OpenVMS V7.3
```

SHOW EVENTS /CONTINUOUS Command

The SHOW EVENTS /CONTINUOUS command provides continuous coverage of the event messages maintained by the selected Watchdog Manager.

You can set up a continuous display of system events as follows:

```
$ SENSE WATCHDOGS SHOW EVENTS /CONTINUOUS
```

The system response is similar to the message shown in the following figure. If there is more than one frame of information, use the Next Screen and Prev Screen keys or the left and right arrow keys to see the other frames. Press function key F10 or Ctrl+Z to cancel the display and return to the prompt.

Continuous Event Message Display

```
                    31-JUL-2005 09:36
          ─────High-priority Messages. Frame 1 / 2─────
31-JUL 09:34 DV3    Batch no_job1 in queue SYS$BATCH (User SYSTEM) is missing
31-JUL 09:34 DV3    Batch VERY_LONG_NAME_FOR_A_BATCHJOB in queue SYS$BATCH (Us
31-JUL 09:34 DV3    Batch NO_JOB1 in queue SYS$BATCH (User SYSTEM) is missing
31-JUL 09:34 DV3    Batch NO_JOB in queue NO_QUEUE (User SYSTEM) is missing
31-JUL 09:32 DV3    Process FOO with UIC=[1,4] is missing
31-JUL 09:32 DV3    Process TEST_PROC with UIC=[200,201] is missing
31-JUL 09:32 DV3    Interactive login limit is below 91 (Current value: 64)
30-JUL 17:00 LATOUR Process NOT_ON_LATOUR with UIC=[1,4] is missing
30-JUL 17:00 YQUEM  Process HKGQCHG with UIC=[1,4] is missing
30-JUL 17:00 YQUEM  Process NOT_ON_YQUEM with UIC=[1,4] is missing
30-JUL 17:00 YQUEM  Interactive login limit is below 200 (Current value: 160)
30-JUL 17:00 CPLAN  Process NOT_ON_CPLAN with UIC=[1,4] is missing
30-JUL 17:00 GALLO  Process NOT_ON_GALLO with UIC=[1,4] is missing
24-JUL 06:54 VINO   Batch queue YELLOW$VMS_MOLSON (On node YQUEM) is stopped
24-JUL 06:54 VINO   Batch queue YELLOW$VMS_JETSTREAM (On node YQUEM) is stoppe

─────Low-priority Messages─────
31-JUL 09:32 DV3    START-Test
Jul 17 11:09 MOWOG  test00
```

SHOW EVENTS Command

The SHOW EVENTS command displays a list of the current event messages maintained by the selected Watchdog Manager.

Delete the external message that you entered earlier as follows:

```
$ SENSE WATCHDOGS DELETE MESSAGE "START-Test"
```

Now use the following commands to initiate a polling sequence and display a list of event messages:

```
$ SENSE WATCHDOGS POLL
$ SENSE WATCHDOGS SHOW EVENTS
```

The system response is similar to the following:

```
*** LOW Priority messages *** No messages.
*** HIGH Priority messages ***
 23-JUL 13:11 ALPHA Process NOT_A_PROCESS with UIC=[1,4] is missing
```

The display message shows that the external message "START-Test" has been removed from the event message list in the Watchdog Agent.

SHOW LOG Command

You can use the SHOW LOG command to display a history of the addition and deletion of built-in and external event messages.

Display the system log file as follows:

```
$ SENSE WATCHDOGS SHOW LOG
```

The system response is similar to the following:

SNS logfile listing (23-JUL-2005 13:20:47.74)

```
DKA300:[SMITH.START]SNS$LOG.DAT;1

************************** 23-JUL-2005 13:02:23 **************************
Record type  : Logfile started
Header       : Logfile started

************************** 23-JUL-2005 13:06:05 **************************
Record type  : Message added
Message type : SNS_C_EXT
Node name    : ALPHA
Message text :
23-JUL 13:05 ALPHA  START-Test

************************** 23-JUL-2005 13:11:50 **************************
Record type  : SNS$CONSOLIDATOR reconfigured
Header       : Profile used is DKA300:[SMITH.START]START.DAT;2

************************** 23-JUL-2005 13:11:51 **************************
Record type  : Message added
Message type : SNS_C_PRO
Node name    : ALPHA
Message text :
23-JUL 13:11 ALPHA  Process NOT_A_PROCESS with UIC=[1,4] is missing

************************** 23-JUL-2005 13:11:51 **************************
Record type  : Information message
Header       : Submitting action routine SEND_MAIL, mode is Spawn,
for message :
Message text :
23-JUL 13:11 ALPHA  Process NOT_A_PROCESS with UIC=[1,4] is missing

************************** 23-JUL-2005 13:11:52 **************************
Record type  : Information message
Header       : Action routine successfully spawned

************************** 23-JUL-2005 13:13:53 **************************
Record type  : Message removed
Message type : SNS_C_EXT
Node name    : ALPHA
Message text :
23-JUL 13:05 ALPHA  START-Test
```

Using the Controller Commands

You can enter and leave the Watchdog Manager controller program as follows:

```
$ SENSE WATCHDOGS
SNS> EXIT
$
```

The controller returns the SNS> prompt where you can enter controller commands. The EXIT command terminates the controller program and returns the DCL prompt.

You can also enter single commands at the DCL prompt. For example, you can display a single screen of the current event messages as follows:

```
$ SENSE WATCHDOGS SHOW EVENTS
```

This command displays a list of event messages and returns to the DCL prompt.

Select a Watchdog Manager

This section describes how to select a running Watchdog Manager.

A Watchdog Manager runs as a detached process that continues running after you log out. When you log in again, the SET CONSOLIDATOR command allows you to access the same Watchdog Manager or any other Watchdog Managers that are running on the system.

You can determine which Watchdog Managers are running on the system as follows:

```
$ SENSE WATCHDOGS
SNS> SHOW CONSOLIDATOR /ALL
```

The system response is similar to the following:

```
Controller        : V2.4-0510

Watchdog Manager     : 2036 V2.4-0510 "Getting Started"
Watchdog Manager     : 4395 V2.4.2-0201 OPERATIONS
Watchdog Manager     : 5171 V2.4-0510
```

The system displays brief information about all Watchdog Managers on the system. You can then set the Watchdog Manager you want to access as follows:

```
SNS> SET CONSOLIDATOR 2036
SNS> SHOW CONSOLIDATOR
```

The system response is similar to the following:

```
Controller        : V2.4-0510

Watchdog Manager     : 2036 V2.4-0510 "Getting Started"
```

Now enter the following command:

```
SNS> SHOW EVENTS
```

The system response is similar to the following:

```
*** LOW Priority messages ***
 No messages
*** HIGH Priority messages ***
29-JUL 16:28 ALPHA  Process NOT_A_PROCESS with UIC=[1,4] is missing
```

Add Nodes to Your Profile

You can now start expanding your profile by adding additional nodes as follows:

```
$ SENSE WATCHDOGS EDIT PROFILE
SNS$EDIT> ADD NODE YQUEM /CLASS=START
SNS$EDIT> ADD NODE YQUEM LOGINS /LIMIT=200
SNS$EDIT> ADD NODE YQUEM PROCESS NOT_ON_YQUEM SMITH
SNS$EDIT> ADD NODE YQUEM BATCHJOB BATCH_NOT_ON_YQUEM
SNS$EDIT> ADD NODE LATOUR /CLASS=START
SNS$EDIT> ADD NODE LATOUR LOGINS /LIMIT=64
SNS$EDIT> ADD NODE LATOUR PROCESS NOT_ON_LATOUR
SNS$EDIT> ADD NODE LATOUR FREE_BLOCKS MOSEL /PERCENT=15
SNS$EDIT> EXIT
```

You can then reconfigure the selected Watchdog Manager with the updated profile as follows:

```
$ SENSE WATCHDOGS RECONFIGURE
```

The system response is similar to the following:

```
%SNS-I-RECONFINPROG, Reconfiguration in progress...
%SNS-I-PROREADWAIT, Reading profile, please wait ...
$
```

You can now examine high priority events as follows:

```
$ SENSE WATCHDOGS SHOW EVENTS /PRIORITY=HIGH
```

The system response is similar to the following:

```
*** HIGH Priority messages ***
29-JUL 16:28 ALPHA  Process NOT_A_PROCESS with UIC=[1,4] is missing
29-JUL 16:35 YQUEM  Interactive login limit is below 200 (Current value: 160
29-JUL 16:35 YQUEM  Process NOT_ON_YQUEM with UIC=[SMITH] is missing
29-JUL 16:35 VINO   Disk MOSEL has less than 10% (~237615) free blocks
29-JUL 16:35 LATOUR Process NOT_ON_LATOUR with UIC=[1,4] is missing
```

The system response verifies that you added two nodes to the profile with interactive login limit and missing process verification on both nodes. It also shows that disk MOSEL on node VINO has less than 10% free blocks.

When appropriate the Watchdog Manager substitutes OpenVMS cluster aliases for node names in event messages. For example, the event message for the free blocks on MOSEL shows VINO as the node because node LATOUR is in a cluster with the cluster alias VINO.

Managing Watchdog Manager Processes

The following descriptions and examples describe the complete set of controller commands and the tasks for starting a Watchdog Manager process and a display of the current event messages.

Choosing a Profile

A valid profile must be in place before you can start a Watchdog Manager process. The profile is a data file that stores the parameters and defaults used by the Watchdog Manager to monitor system and network events.

Profiles can be tailored to provide different types of event coverage. You can run more than one Watchdog Manager process, with each Watchdog Manager using a different profile to provide the desired coverage. For example, you can set one screen to display clusterwide activities and another screen to display only certain classes of events, such as nodes running critical applications.

Profile Name Examples

The following are examples of profile names that can be used to identify different types of event coverage:

```
SYS$PROFILE.DAT         ! Default profile for general coverage of all nodes.
SYS$CRTCL.DAT           ! Coverage for nodes running critical applications.
SYS$SFTWR.DAT           ! Coverage for nodes used for software development.
SYS$DECnet.DAT          ! Coverage for the DECnet router nodes.
SYS$VAXSTA.DAT          ! Coverage for VAXstation systems.
```

CONVERT Command

If your system has been running Data Center Monitor (DCM) software, you can use the CONVERT command to convert an existing DCM profile to Watchdog Manager format. The following command converts the DCM profile DCM$OLD_PROFILE.DAT to Watchdog Manager format and stores it as the profile SNS$NEW_PROFILE.DAT:

```
SNS> CONVERT DCM$OLD_PROFILE.DAT SNS$NEW_PROFILE.DAT
```

Starting the Controller

The following commands show how to enter the controller program, get help on commands, and leave the controller program:

SENSE WATCHDOGS Command

Entering the SENSE WATCHDOGS command at the DCL prompt starts the controller program. The controller program returns the SNS> prompt from where you can enter controller commands:

```
$ SENSE WATCHDOGS
SNS>
```

Examples in the following sections can be performed on a hardcopy terminal except for the continuous display process that requires a video display.

- HELP Command

    The HELP command provides online information about the controller commands.

- EXIT Command

    The EXIT command terminates the controller program and returns to the DCL prompt. If you start a Watchdog Manager process, you can log off the system and enable the notification procedures to take action on any abnormal events detected by the Watchdog Manager software.

Starting a Watchdog Manager Process

The following commands show how to start, control, and stop a Watchdog Manager process:

START CONSOLIDATOR Command

This command starts a detached Watchdog Manager process that periodically polls the nodes defined in the profile. A profile must be in place for the Watchdog Manager to use. The following command starts a Watchdog Manager process that uses one of the above profiles to provide coverage for VAXstation systems:

```
SNS> START CONSOLIDATOR /PROFILE=SYS$VAXSTA.DAT -
_SNS> /INFORMATION="VAXstation coverage"
```

If the /PROFILE qualifier is not given, the Watchdog Manager uses the default file SNS$PROFILE.DAT in your default directory. The /INFORMATION qualifier stores a message that returns information about the use or purpose of the process when you use the SHOW CONSOLIDATOR command.

The Watchdog Manager startup assigns the process name SNS$CONS_nnnn where nnnn is the numeric identifier of the Watchdog Manager process. The startup also assigns the nnnn value to the logical name SNS$CONSOLIDATOR_ID which selects the Watchdog Manager process to receive controller commands.

For all enabled forms of notification, the Watchdog Manager startup initiates action routines, DECtalk calls, or Mailbox messages for any existing event messages.

SHOW CONSOLIDATOR Command

If no other Watchdog Manager processes are running, the SHOW CONSOLIDATOR command returns information about the Watchdog Manager process you have created:

```
SNS> SHOW CONSOLIDATOR /BRIEF /ALL

Controller        : Vx.x

Watchdog Manager  : 6801 Vx.x
 "VAXstation coverage"
```

The /ALL qualifier shows brief or full information for all Watchdog Manager processes running on the system. The /BRIEF qualifier shows only the assigned Watchdog Manager number and the informational message provided with the /INFORMATION qualifier in the START WATCHDOG MANAGER command.

SET CONSOLIDATOR nnnn Command

If you are running multiple Watchdog Manager processes, this command verifies the existence of a Watchdog Manager process with the specified identifier, then sets the logical name SNS$CONSOLIDATOR_ID to the Watchdog Manager process to use with subsequent controller commands:

```
SNS> SET CONSOLIDATOR 1234
```

DCL Command SHOW LOGICAL SNS$

The following DCL command shows that Watchdog Manager process 1234 is currently selected by SNS$CONSOLIDATOR_ID for controller commands:

```
$ SHOW LOGICAL SNS$*

"SNS$CONSOLIDATOR_ID" = "1234"
```

STOP CONSOLIDATOR Command

The STOP CONSOLIDATOR command stops the specified Watchdog Manager process:

```
SNS> STOP CONSOLIDATOR 1234
```

Without the process number, the command stops the Watchdog Manager currently selected by the logical name SYS$WATCHDOG MANAGER_ID, which is then deleted if it refers to the stopped process. The /ALL qualifier performs an orderly shutdown of all Watchdog Manager processes.

Starting an Event Message Display

The commands that show how to use a single or continuous event message display are demonstrated in the following sections.

SHOW EVENTS Command

The SHOW EVENTS command displays a list of the current event messages maintained by the selected Watchdog Manager process.

Command qualifiers enable you to display high or low priority messages, or both, or display any hidden messages. You can also select the event codes for only the messages you want to display. The following command displays high priority messages for CPU, memory, or disk errors:

```
SNS> SHOW EVENTS /PRIORITY=HIGH /EVENT_CODES=(CPU,MEM,DSK)
```

Without the /EVENT_CODES qualifier, the command displays the messages for all event codes by default.

SHOW EVENTS /CONTINUOUS Command

The SHOW EVENTS /CONTINUOUS command starts an interactive process that displays a continuous coverage of the event messages maintained by the selected Watchdog Manager process. The following command displays high and low priority messages for all event codes:

```
SNS> SHOW EVENTS /CONTINUOUS
```

The qualifiers are the same as for the SHOW EVENTS command.

Although the continuous events display process is interactive, only a few commands are available. If more than one screen is to be displayed, press the Next Screen key to display the next screen of event messages or the Prev Screen key to display the previous screen of event messages. The right and left arrow keys have the same functions as the Next Screen and Prev Screen keys. The F10 function key or Ctrl+Z terminates the display and returns to the SNS> prompt.

Adding or Deleting External Messages

The shareable image file SNS$SHR.EXE provides access for calls from user-supplied application programs that add or delete external messages.

The commands that show how to add or delete external messages are demonstrated in the following sections.

ADD MESSAGE Command

The ADD MESSAGE command adds messages to the external message list maintained by the Watchdog Agent process on the specified node. You can provide coverage for events not detected by the Watchdog Agent but which are reported by a DCL procedure or by calls to the shareable image by user software. The following command adds an external message to node NODEX:

```
SNS> ADD MESSAGE "Income averaging process missing" /NODE=NODEX
```

If the /NODE qualifier is not specified, the command adds the external message to the Watchdog Agent process on the local node.

DELETE MESSAGE Command

The DELETE MESSAGE command deletes an external event message from the external message list maintained by the Watchdog Agent process on the specified node:

```
SNS> DELETE MESSAGE "Income averaging" /NODE=NODEX
```

If the text matches the beginning portion of any existing external or deletable message on NODEX, the entire message is deleted. The string comparison is not case-sensitive so you can delete several messages with one command.

If the /NODE qualifier is not specified, the command deletes the external message from the Watchdog Agent process on the local node.

Controlling Watchdog Manager Processes

The commands that can be used to set or change coverage parameters are demonstrated in the following sections.

POLL Command

The POLL command polls all enabled nodes in the profile. The /RESET_LAST_SCAN qualifier resets the time stamp for events with individually set polling intervals:

```
SNS> POLL /RESET_LAST_SCAN
```

RECONFIGURE Command

The RECONFIGURE command causes the Watchdog Manager process to read a specified profile or the profile currently in use (which may have been edited) then update its internal data structure for monitoring events. The following command directs the Watchdog Manager to reconfigure using SYS$NEWPRFL.DAT as the new profile:

```
SNS> RECONFIGURE /PROFILE=SYS$NEWPRFL
```

SET COLLECTING Command

The SET COLLECTING command sets the Watchdog Manager to collect events that have occurred before or since specific dates and times. The following command sets the Watchdog Manager to collect event messages that have appeared since 3:00 p.m. on March 30, 2005:

```
SNS> SET COLLECTING /SINCE=30-MAR-2005:15:00:00
```

SET POLLING_INTERVAL Command

The SET POLLING_INTERVAL command sets the Watchdog Manager interval for polling and notification operations. The following command sets a polling interval of 5 minutes (300 seconds):

```
SNS> SET POLLING_INTERVAL 300
```

Troubleshooting Tools

Watchdog Manager process elements can be disabled and enabled to limit the levels or types of coverage while troubleshooting system or network problems.

Logging and Log Files

A Watchdog Manager process can write a log file that stores information about all recorded events and the actions taken.

SET LOG Command

The SET LOG command opens a log data file for the selected Watchdog Manager to write event status and notification information. The following command enables logging to the file SNS$TMPLOG.DAT in the default directory:

```
SNS> SET LOG SNS$TMPLOG.DAT
```

DISABLE/ENABLE LOG Commands

The DISABLE LOG command directs the selected Watchdog Manager to stop writing to the current log file. The ENABLE LOG command directs the Watchdog Manager to resume writing to the file previously disabled by a DISABLE LOG command:

```
SNS> DISABLE LOG
```

```
SNS> ENABLE LOG
```

SHOW LOG Command

The SHOW LOG command shows the contents of the specified log file or the current log file for the selected Watchdog Manager. Of the following commands, the first command reads the contents of the default log file SNS$LOG.DAT and stores the information in the ASCII file LOG_INFO.TXT. The second command displays the contents of the specified log file SNS$TMPLOG.DAT.

```
SNS> SHOW LOG /OUTPUT=LOG_INFO.TXT
```

```
SNS> SHOW LOG SNS$TMPLOG
```

Changing Node Coverage

Watchdog Manager processes can be modified to limit the coverage of nodes currently defined in the profile.

DISABLE NODE Command

The DISABLE NODE command stops the polling of nodes defined in the profile. The nodes to be disabled can be specified individually or by class. In the following example, the first command disables nodes NODEA and NODEB, the second command disables all nodes in the LAB2 class, and the third command disables all nodes in the LAB1 and LAB3 classes:

```
SNS> DISABLE NODE NODEA,NODEB

SNS> DISABLE NODE /CLASS=LAB2

SNS> DISABLE NODE /CLASS=(LAB1,LAB3)
```

Note: Nodes must be disabled or enabled individually or by class. The cluster alias cannot be used.

ENABLE NODE Command

The ENABLE NODE command enables the polling of nodes previously disabled by a DISABLE NODE command. The following command enables all nodes in class LAB2:

```
SNS> ENABLE NODE /CLASS=LAB2
```

Changing Notification Options

Watchdog Manager processes can be modified to enable and disable notification for events as defined in the profile. The valid notification sets are ACTION_ROUTINE, MAILBOX, and DECtalk.

DISABLE NOTIFICATION Command

The DISABLE NOTIFICATION command disables notification action for events defined in the profile or for events previously enabled by the ENABLE NOTIFICATION command. The following command stops sending event messages to OpenVMS mailboxes:

```
SNS> DISABLE NOTIFICATION MAILBOX
```

ENABLE NOTIFICATION Command

The ENABLE NOTIFICATION command enables notification actions for events not defined in the profile or for events previously disabled by a DISABLE NOTIFICATION command. The following command resumes sending event messages to OpenVMS mailboxes:

```
SNS> ENABLE NOTIFICATION MAILBOX
```

Enabling or Disabling Event Messages

Event messages can be hidden so only messages that are related to a problem are displayed.

HIDE MESSAGE Command

The HIDE MESSAGE command marks messages as hidden in the Watchdog Manager list of messages. The messages can be normal event messages or external messages. The following command inhibits the display of all messages from OpenVMS cluster ALPHA that begin with "Income averaging":

```
SNS> HIDE MESSAGE "ALPHA Income averaging"
```

Note: The first word in the quoted string must be the node name or the cluster alias.

SHOW MESSAGE Command

The SHOW MESSAGE command enables event or external messages previously hidden by the HIDE MESSAGE command. The following command enables the display of all messages hidden by the previous command:

```
SNS> SHOW MESSAGE "ALPHA Income averaging"
```

Chapter 2

Event Descriptions

This chapter provides detailed descriptions of events monitored by the System Watchdog software and lists the event error codes and meanings.

An event is a problem or potential problem that the System Watchdog software can detect, for example, an increase in the number of CPU errors, or a node that becomes unreachable over the network. When the Watchdog Manager (consolidator) detects an event, it initiates the appropriate action for that event as defined in the profile. For example, the consolidator can write a message to a display, send an OpenVMS mail message, or initiate a DECtalk telephone call.

The System Watchdog software monitors the following event types:

■   Network Events

    Events related to the network connection with a system, such as whether the system is reachable or unreachable over DECnet or TCP/IP.

■   System/Process Events

    Events related to a system such as CPU, memory, or device errors, and events related to processes such as the existence of specific processes or batch jobs.

■   External Events

    Events with user-supplied text that are reported by external procedures or software.

Network Events

The Watchdog Manager produces network events when there are problems establishing a network connection with a Watchdog Agent process on one of the nodes being polled.

Network events are states that cause the event message to be removed only when the condition is corrected. Network event messages cannot be deleted with the DELETE MESSAGE command.

Node Unreachable

The Node Unreachable (UNR) event occurs when the consolidator cannot establish a DECnet connection to the node within a preset timeout period. This can mean that the node is down or DECnet is not running on the node. The message can also occur as a transient event if the network or node is busy.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Node Out Of Resources

The Node Out of Resources (ORS) event occurs when a resource allocation failure is encountered while attempting to initiate a DECnet logical link to a remote node. The message corresponds to the OpenVMS error message "REMRSRC, insufficient system resources at remote node." The message can also occur as a transient event.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Node Unknown

The Node Unknown (UNK) event occurs when the specified node does not exist in the volatile DECnet database on the node where the consolidator process is running.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

No SNS Server

The No SNS Server (WDM) event occurs when a DECnet logical link to the specified node is successfully created but there is no DECnet object for the Watchdog Agent on that node. Normally, this means that the Watchdog Agent is not running on the node.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Connection Problems

The Connection Problems (OTH) event occurs when an attempt to initiate a DECnet logical link has failed for some reason other than the reasons discussed above. Other link failure messages include "Network partner exited"and "Network protocol error."

The message "Connect to network object rejected" can result from the access restriction to the Watchdog Agent as specified in the system rights list database.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

System/Process Events

The Watchdog Manager produces System/Process events when there are CPU, memory, or device problems on a local or remote polled node.

Exclusions

Some events cover many devices or queues without requiring you to specify individual devices or queues. For these types of events, you can exclude specific devices or queues from the coverage. For example, the Disk State Problem event reports on all disks on the node. To exclude one or more devices, you can enter a profile editor command with a qualifier that specifies the name of the device to be excluded.

CPU Errors

The CPU Errors (CPU) event occurs when the Watchdog Agent detects an increase in the CPU error count on the specified node. The CPU error count shown is the same as displayed by the DCL command SHOW ERROR.

The event message can only be removed with the DELETE MESSAGE command.

Memory Errors

The Memory Errors (MEM) event occurs when the Watchdog Agent detects an increase in the memory error count on the specified node. The memory error count shown is the same as displayed by the DCL command SHOW ERROR.

The event message can only be removed with the DELETE MESSAGE command.

Disabled Memory

The Disabled Memory (DMM) event occurs when the Watchdog Agent detects that pages of memory are disabled on a node. This can mean pages of memory marked bad during the boot process.

The event message can only be removed by the DELETE MESSAGE command.

Disk Errors

The Disk Errors (DSK) event occurs when the Watchdog Agent detects a significant increase in the number of disk errors on any local or HSC-connected disk devices on the specified node.

A report of all disk errors can be misleading for the following reasons:

■   The OpenVMS operating system maintains a count of all errors on disk devices since the last reboot.

■   The error count can relate to problems that have already been corrected.

■   Isolated disk errors are not necessarily significant.

To avoid reporting old disk errors or isolated disk errors, a Disk Error message displays only for the following conditions:

■ Two or more new errors occur in any single scan period (between two consecutive scans).

■ One new error occurs in each of three consecutive scan periods.

After the Watchdog Agent reports the first Disk Error message for a disk, it reports increments in the disk error count.

The Watchdog Manager software provides a means to disable the disk error count filtering. At startup, the Watchdog Agent translates the logical name SNS$DSK_FILTER_OFF. If the logical name exists, the Watchdog Agent reports an event for each increment of the disk error count.

The event message can only be removed with the DELETE MESSAGE command.

Exclusions: Disk names. OpenVMS disk names such as DKA300: or DKA*: include the colon.

Ethernet Errors

The Ethernet Errors (ETH) event occurs when the Watchdog Agent detects an increase in the error count on the Ethernet device in the specified node. The Ethernet error count shown is the same as displayed by the DCL command SHOW DEVICE interface_name.

The event message can only be removed with the DELETE MESSAGE command.

Exclusions: Ethernet interface names

HSC Problem

The HSC Problem (HSC) event occurs when the Watchdog Agent detects a change of state in an HSC device connected to the specified node.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

CI Problem

The CI Problem (CIC) event occurs when the Watchdog Agent detects a change of state in a CI cable path connected to the specified node.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Printer Stalled

The Printer Stalled (PRS) event occurs when the Watchdog Agent detects that one of the printer queues listed in the profile for the node is in the stalled state. Only printer queues that are open and included in the profile are checked. The event is not reported if the queue is closed.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Process Looping

The Process Looping (LOP) event occurs when the Watchdog Agent detects a process on the system that satisfies all of the following conditions:

- Is in a compute status at two consecutive scans

- More than 25 percent of CPU usage between the two scans

- No direct or buffered I/O between the two scans

If the node is running either artificial intelligence or scientific applications, do not select this event for the node.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Disk Near Full

The Disk Near Full (DNF) event occurs when the Watchdog Agent finds that the amount of free space on a disk or volume is below the threshold set by the user. The event message reports the percentage and approximate number of free blocks.

Only disks included in the profile are checked. You can specify either a number of blocks or percentage of free space for the threshold. The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Shadow Set Problem

The Shadow Set Problem (SHS) event occurs when the Watchdog Agent detects one of the following conditions:

■   A shadow set with other than the desired number of members

■   A shadow set performing a full copy operation, if enabled

■   A shadow set performing a merge copy operation, if enabled

Only shadow sets included in the profile are checked.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Disk State Problem

The Disk State Problem (DSS) event occurs when the Watchdog Agent detects one of the following conditions:

■   A disk marked for dismount (Mount/Dismount)

■   A disk in timeout state

■   A disk marked in mount verification state

■   A disk marked in mount verification pending state

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Exclusions: Disk names. OpenVMS disk names such as DKA300: or DKA*: include the colon.

Software Write Locked

The Software Write Locked (SWL) event occurs when the Watchdog Agent finds a disk marked as software write locked. The software write locked state is not checked for CD disks.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Exclusions: Disk names. OpenVMS disk names such as DKA300: or DKA*: include the colon. When a node is added to a profile, an exclusion entry for console disks equal to "CSA*" is included.

Batch Queue Problem

The Batch Queue Problem (BQP) event occurs when the Watchdog Agent finds one of the following conditions:

■ A queue with status "Pausing"

■ A queue with status "Paused"

■ A queue with status "Stopping"

■ A queue with status "Stopped"

The event is not reported if the queue is closed.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Exclusions: Batch queue names

Device Queue Problem

The Device Queue Problem (DQP) event occurs when the Watchdog Agent finds one of the following conditions for an open device queue:

■ A queue with status "Paused"

■ A queue with status "Pausing"

■ A queue with status "Stopping"

- A queue with status "Stopped"

- A queue with status "Resetting"

- A queue with status "Device unavailable"

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Exclusions: Device queue names

Queue Manager Problem

The Queue Manager Problem (QCP) event occurs when the Watchdog Agent finds one of the following conditions:

- A stopped queue manager

- A job control process that is stopped or is not answering requests

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Internal Messages

A DCMX watchdog generates the Internal Messages (INT) event.

Missing Process

The Missing Process (PRO) event occurs when the Watchdog Agent finds that a process is missing. Only processes specified in the profile are checked.

The parameter PROCESS provides the name and UIC of the process to monitor.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Missing Batchjob

The Missing Batchjob (BAT) event occurs when the Watchdog Agent finds that a batch job is missing or retained on error. Only batch jobs specified in the profile are checked.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Interactive Login Limit

The Interactive Login Limit (ILL) event occurs when the Watchdog Agent detects an interactive login limit below the specified value.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Processor Stopped

The Processor Stopped (SMP) event occurs when one or more processors in a multiprocessor system are no longer running.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Time Consistency

The Time Consistency (TIM) message is routed according to the event priority field of the class definition. This message displays when the Watchdog Agent detects a difference of more than 5 minutes between the local node and the remote node after adjusting for a time zone difference.

The event message is removed when the condition is corrected and cannot be removed by the DELETE MESSAGE command.

Validation Error

The Validation Error (VAL) event occurs when the profile specifies a nonexistent object.

External Events

External events with user-supplied text can be reported to a Watchdog Agent by external procedures or software. The Watchdog Agent process assigns the EXT event code to all external messages.

External messages can be added to or deleted from the list of messages maintained by a Watchdog Agent process by using the ADD MESSAGE and DELETE MESSAGE commands. The "User Programming" chapter provides guidelines for developing routines for handling external messages.

Event Code Summary

The following table lists the valid event codes and definitions.

Event Code Summary

Code	Definition
Network Events:	
UNR	Node unreachable
ORS	Node out of resources
UNK	Node unknown
WDM	No SNS server
OTH	Connection problems
System/Process Events:	
CPU	CPU errors
MEM	Memory errors
DMM	Disabled memory
DSK	Disk errors[1]
ETH	Ethernet errors[1]
HSC	HSC problem
CIC	CI problem

Code	Definition
PRS	Printer queue stalled[2]
LOP	Process looping
DNF	Disk near full[2]
SHS	Shadow set problem[2]

Code	Definition
DSS	Disk state problem[1,3]
SWL	Software write-locked disk[1,3]
BQP	Batch queue problem[1]
DQP	Device queue problem[1]
QCP	Queue manager problem
INT	Internal messages
PRO	Missing process[2]
BAT	Missing batch job[2]
ILL	Interactive login limit[2]
SMP	Processor stopped
External Events:	
EXT	External message

[1] Event codes supporting exclusions.

[2] Valid event codes for node object coverage.

[3] Event codes with DFS coverage.

Controller Commands

Overview

The controller commands enable you to start, stop, and manage Watchdog Manager processes.

When you enter the SENSE WATCHDOGS command at the DCL prompt, the controller starts and returns the SNS> prompt from where you can enter controller commands:

```
$ SENSE WATCHDOGS
SNS> EXIT
```

The EXIT command terminates the controller program and returns to the DCL prompt. Commands entered at the controller prompt have a 1024-character limit.

You can also enter single controller commands at the DCL prompt. For example, the following command stops the Watchdog Manager writing to the log file and returns to the DCL prompt:

```
$ SENSE DISABLE LOG
$
```

Commands entered at the DCL prompt have a 256-character limit.

Default values for command parameters are indicated by (D) in the command descriptions.

ADD MESSAGE

Overview

Adds or updates an external message in a Watchdog Agent event message list.

Format

ADD MESSAGE "message text" [/qualifier...]

Parameters

"message text"
Text of the external message to be added, contained in quotes.

Qualifiers

/NODE=node_name
DECnet name of the node for which you are adding the external message text. The default is the current node.

/TRANSPORT=TCPIP | DECnet (D)
Selects DECnet or TCP/IP as the network transport. The default is DECnet.

/LOG, /NOLOG (D)
The /LOG qualifier displays an informational message if the command is successful. The /NOLOG qualifier inhibits the informational message. The default is /NOLOG.

Description

The ADD MESSAGE command adds or updates an external message in the message list maintained by the detached Watchdog Agent process. User processes require OPER, SYSPRV, or SETPRV privileges to use the ADD MESSAGE command.

If the new message text and length both match an existing message, the new message replaces the old message. The string comparison is not case sensitive, so you can update a message (for a new date and time, for example) without having to delete, then add, the same message.

If you add an external message without a vertical bar (|), a subsequent ADD command completely replaces the message with the same message text. The event display then shows the same message with an updated date and time. The message is displayed as it was originally entered, without changing case.

If you use the vertical bar (|) as an update marker, the match is based on the characters preceding the vertical bar. When you add an external message with a vertical bar, the message is inserted in the watchdog's message list with the vertical bar, but the vertical bar is not displayed. If you then add another message with the same characters up to and including the vertical bar, the new message replaces the message text that follows the vertical bar.

For example, if you add the message:

```
"FAN - |Low speed"
```

The event display shows:

```
dd-mmm  hh:mm  FAN - Low speed
```

If you then add the message:

```
"FAN - |High speed"
```

The event display then shows:

```
dd-mmm  hh:mm  FAN - High speed
```

The "High speed" message replaces the "Low speed" message.

The shareable image file SNS$SHR.EXE provides the SNS$ADD_MESSAGE and SNS$DELETE_MESSAGE entry points for calls from user-supplied application programs that add or delete external messages.

Related Commands

DELETE MESSAGE

Examples

```
SNS> ADD MESSAGE "Process started." /LOG
%SNS-S-ADDED, Message successfully added.
```

This command adds the external message "Process started." on the current node and returns an informational message.

```
SNS> ADD MESSAGE "Process started." /NODE=NODEB
```

This command adds the external message "Process started." to the System Monitor process on node NODEB.

CONVERT

Overview

Converts and copies a Data Center Monitor Version 3.0 profile to a Watchdog Manager Version x.x profile.

Format

CONVERT file1 file2

Parameters

file1
Input file name of the Data Center Monitor Version 3.0 profile.

file2
Output file name for the Watchdog Manager Version x.x profile.

Description

The CONVERT command reads each record of a profile in Data Center Monitor Version 3.0 format and writes it to a profile in Watchdog Manager Version x.x format.

Example

```
SNS> CONVERT DCM$PROFILE.DAT SNS$PROFILE.DAT
```

DCM$PROFILE.DAT to Watchdog Manager format and stores it in the Watchdog Manager profile SNS$PROFILE.DAT.

DELETE MESSAGE

Overview

Deletes an external message or removable built-in message from the specified Watchdog Agent process.

Format

DELETE MESSAGE "message text" [/qualifier...]

Parameters

"message text"
Text of the external message to be deleted, contained in quotes.

Qualifiers

/NODE=name
Name of the node for which you are deleting the external message text. The default is the current node.

/TRANSPORT=TCPIP | DECnet (D)
Selects DECnet or TCP/IP as the network transport. The default is DECnet.

/LOG, /NOLOG (D)
The /LOG qualifier displays the informational (success) message if the command is successful. The /NOLOG qualifier inhibits the informational (success) message. The default is /NOLOG.

Description

The DELETE MESSAGE command deletes an external message or removable built-in message from a Watchdog Agent's message list. User processes require OPER, SYSPRV, or SETPRV privileges to use the DELETE MESSAGE command.

If the text supplied with the command matches the beginning portion of any existing message, the process removes the entire message. The string comparison is not case sensitive, so you can remove multiple messages with one command.

The shareable image file SNS$SHR.EXE provides the SNS$ADD_MESSAGE and SNS$DELETE_MESSAGE entry points for calls from user-supplied application programs that add or delete external messages.

Related Commands

ADD MESSAGE

Examples

```
SNS> DELETE MESSAGE "Info" /LOG
%SNS-S-DELETED, Message successfully deleted.
```

This command deletes all external messages beginning with "info," "Info," or "INFO" for the Watchdog Agent process on the current node and returns an informational message.

```
SNS> DELETE MESSAGE "Process started" /NODE=NODEB
```

This command deletes all external messages beginning with "Process started" for the Watchdog Agent process on NODEB.

DISABLE

Overview

Disables specified Watchdog Manager functions.

Format

DISABLE option

Options

- LOG
- NODE
- NOTIFICATION

Description

The DISABLE command directs the Watchdog Manager to stop or inhibit the specified function.

Note: The DISABLE command modifies the Watchdog Manager's memory-resident data structures and it is not necessary to reconfigure the Watchdog Manager.

Related Commands

ENABLE

Examples

Examples of each option are provided on the following pages.

DISABLE LOG

Overview

Stops the Watchdog Manager from writing to the log file.

Format

DISABLE LOG

Description

The DISABLE LOG command directs the Watchdog Manager to stop writing to the current log file. The log file remains and a subsequent ENABLE LOG command resumes appending records to the existing file.

Related Commands

- ENABLE LOG
- SET LOG

Example

```
SNS> DISABLE LOG
```

This command stops writing to the log file.

DISABLE NODE

Overview

Stops the Watchdog Manager polling of specified nodes.

Format

DISABLE NODE [name,...] [/qualifier]

Parameters

name,...
Name of one or more nodes to be disabled. Node names may be specified with the wildcard characters (* and %).

Qualifiers

/CLASS=(name,...)
Names one or more classes of nodes to be disabled. All nodes in each class are disabled. Class names may be specified with the wildcard characters (* and %).

Description

The DISABLE NODE command directs the Watchdog Manager to stop the polling of specified nodes until reenabled by a subsequent ENABLE NODE command.

Note: The effects of the DISABLE NODE command may not appear immediately on a running SHOW EVENTS /CONTINUOUS display. The display must wait for the polling and message list update process to complete

.

Related Commands

ENABLE NODE

Examples

```
SNS> DISABLE NODE NODEA,NODEB
```

This command stops the polling of NODEA and NODEB.

```
SNS> DISABLE NODE /CLASS=CLUSTER1
```

This command stops the polling of all nodes in class CLUSTER1.

```
SNS> DISABLE NODE /CLASS=(CLUSTER1,LAB4)
```

This command stops the polling of all nodes in classes CLUSTER1 and LAB4.

DISABLE NOTIFICATION

Overview

Disables action routine, mailbox, and DECtalk notification sets.

Format

DISABLE NOTIFICATION option,...

Options

- ACTION_ROUTINE
- DECtalk
- MAILBOX

Description

The DISABLE NOTIFICATION command disables action routine, mailbox, or DECtalk notifications by the Watchdog Manager. The command can be used to override the default setting in the profile or to change the state set by a previous ENABLE NOTIFICATION command.

Related Commands

ENABLE NOTIFICATION

Example

```
SNS> DISABLE NOTIFICATION MAILBOX
```

This command stops sending event messages to OpenVMS mailboxes.

EDIT PROFILE

Overview

Invokes the online profile editor program or profile editor windows facility.

Format

EDIT PROFILE [filename] [/qualifier...]

Parameters

filename
Name of the profile to be edited. The default is to edit the profile currently defined by SNS$CONSOLIDATOR_ID. The default file extension is .DAT.

Qualifiers

/OUTPUT=filename
Name of the output profile to be written if not specified by the filename parameter. The default is to edit the profile specified by the filename parameter. The default file extension is .DAT.

/INTERFACE=DECwindows
Invokes the profile editor facility on the DECwindows Motif display.

Description

The EDIT PROFILE command without the /INTERFACE=DECwindows qualifier invokes an online editing session for the specified profile and places the user at the SNS$EDIT> prompt. Chapter 5 describes the online profile editor commands.

The EDIT PROFILE /INTERFACE=DECwindows command invokes the profile editor facility on a DECwindows Motif display. Chapter 6 describes the profile editor windows facility.

Examples

```
SNS> EDIT PROFILE SNS$PROFILE
SNS$EDIT>
```

This command enters the online profile editor on the default profile SNS$PROFILE.DAT.

```
SNS> EDIT PROFILE /INTERFACE=DECwindows with Motif graphical interface
```

This command invokes the profile editor

.

```
SNS> EDIT PROFILE SNS$PROFILE /INTERFACE=DECwindows
```

This command invokes the profile editor Motif Interface on the profile SNS$PROFILE.DAT.

ENABLE

Overview

Enables specified Watchdog Manager functions.

Format

ENABLE option

Options

- LOG
- NODE
- NOTIFICATION

The ENABLE command directs the Watchdog Manager to start or resume the specified function.

Note: The ENABLE command modifies the Watchdog Manager's memory-resident data structures and it is not necessary to reconfigure the Watchdog Manager.

Related Commands

DISABLE

Examples

Examples of each option are provided on the following pages.

ENABLE LOG

Overview

Enables Watchdog Manager writing to the log file.

Format

ENABLE LOG

Description

The ENABLE LOG command directs the Watchdog Manager to resume writing to the log file previously disabled by the DISABLE LOG command.

Related Commands

- DISABLE LOG
- SET LOG

Example

```
SNS> ENABLE LOG
```

This command resumes writing to the log file.

ENABLE NODE

Overview

Enables Watchdog Manager polling of specified nodes.

Format

ENABLE NODE [name,...] [/qualifier]

Parameters

name,...
Name of one or more nodes to be enabled. Node names may be specified with the wildcard characters (* and %).

Qualifiers

/CLASS=(name,...)
Names one or more classes of nodes to be enabled. All nodes in each class are enabled. Class names may be specified with the wildcard characters (* and %).

Description

The ENABLE NODE command directs the Watchdog Manager to resume polling specified nodes that were previously disabled by the DISABLE NODE command.

Note: The effects of the ENABLE NODE command may not appear immediately on a running SHOW EVENTS /CONTINUOUS display. The display must wait for the polling and message list update process to complete.

Related Commands

DISABLE NODE

Examples

```
SNS> ENABLE NODE NODEA, NODEB
```

This command resumes polling of NODEA and NODEB.

```
SNS> ENABLE NODE CLASS=(LAB6, MVII)
```

This command resumes polling of all nodes in classes LAB6 and MVII.

ENABLE NOTIFICATION

Overview

Enables action routine, mailbox, and DECtalk notifications.

Format

ENABLE NOTIFICATION option,...

Options

- ACTION_ROUTINE
- DECtalk
- MAILBOX

Description

The ENABLE NOTIFICATION command enables action routine, mailbox, and DECtalk notifications by the Watchdog Manager. It can be used to override the default setting in the profile or to change the state set by a previous DISABLE NOTIFICATION command.

Related Commands

DISABLE NOTIFICATION

Example

```
SNS> ENABLE NOTIFICATION MAILBOX
```

This command resumes the sending of event messages to OpenVMS mailboxes.

EXIT

Overview

Terminates the controller program.

Format

EXIT

Description

The EXIT command terminates your session with the controller program and returns you to the DCL prompt.

Example

```
SNS> EXIT
$
```

This command terminates the controller program.

HELP

Overview

Provides online information about the controller commands.

Format

HELP [command [option [option]

Parameters

command
The command for which you are requesting help.

option
Any parameter, option, or qualifier invoked by the command.

Description

The HELP command implements the standard OpenVMS Help protocol to provide online information about the controller commands during a controller session.

Examples

```
SNS> HELP
```

This command invokes Help at the top menu.

```
SNS> HELP HIDE
```

This command invokes Help on the HIDE command.

```
SNS> HELP HIDE MESSAGE /LOG
```

This command invokes Help on the /LOG qualifier of the HIDE MESSAGE command.

HIDE MESSAGE

Overview

Marks an event message as hidden in the Watchdog Manager list of messages. Messages to be hidden can be either built-in or external.

Format

HIDE MESSAGE "node_name message text" [/qualifier]

Parameters

"node_name message text"
Event message text to mark as hidden, where the first word must be the node name or cluster alias. All messages matching the subsequent message text are hidden.

Qualifiers

/LOG, /NOLOG (D)
The /LOG qualifier displays an informational message if the command is successful. The /NOLOG qualifier inhibits the informational message. The default is /NOLOG.

Description

The HIDE MESSAGE command directs the Watchdog Manager to mark an event or message as hidden in its list of event messages. The command marks all messages that begin with the characters given in "message text."

The hidden status is removed if an event message is updated. The command only affects messages in the Watchdog Manager and does not affect messages in any Watchdog Agent list.

The first word of the message text must be the node name or cluster alias as displayed by the SHOW EVENTS or SHOW EVENTS /CONTINUOUS command. For example, if the message to be hidden is "12-OCT 03:45 NODEX unreachable," the HIDE MESSAGE command parameter is "NODEX unreachable."

When entering the message text, only one space is necessary between the node name or cluster alias and the remaining text. (The SHOW EVENTS display line pads the node or cluster field to 6 characters with spaces.)

Related Commands

SHOW MESSAGE

Examples

```
SNS> HIDE MESSAGE "GRINCH"
```

This example hides all messages for the GRINCH VMScluster.

```
SNS> HIDE MESSAGE "NODEA"
```

This example hides all messages for NODEA.

```
SNS> HIDE MESSAGE "NODEB Process missing"
```

This example hides all event messages beginning with "Process missing" for NODEB.

POLL

Overview

Polls all enabled nodes.

Format

POLL [/qualifier]

Qualifiers

/RESET_LAST_SCAN
Causes all events to be checked during the scan, regardless of the individually set scan intervals, and resets the last scan time-stamp for all events.

Description

The POLL command directs the Watchdog Manager to poll all enabled nodes in the profile.

Some events, such as Disk Free Blocks and Printer Stalled, have polling intervals that can be individually set. Although the Watchdog Manager polls the watchdogs at a regular interval (60 seconds by default), events with settable polling intervals are polled only at their set intervals (but not more often than the Watchdog Manager polling interval). The /RESET_LAST_SCAN qualifier directs the Watchdog Manager to immediately poll all watchdogs, including events with individual polling intervals. When polling has completed, the interval timer is reset for each event with a settable polling interval.

Example

```
SNS> POLL /RESET_LAST_SCAN
```

This example immediately pollys all Watchdog Manager processes and resets the time-stamp of the last scan.

RECONFIGURE

Overview

Requests reconfiguration of the selected Watchdog Manager process.

Format

RECONFIGURE [/qualifier...]

Qualifiers

/PROFILE=filename
File name of the profile to be used for the reconfiguration. If the /PROFILE qualifier is not given, the default is to use the latest version of the profile currently in use by the selected Watchdog Manager.

/FIRST_SCAN=(option,...)
Enables or disables notification action on the first scan of the reconfiguration, which can contain old messages. Valid options are:

- [NO]ACTION_ROUTINE --- Specifies whether action routines are to be triggered immediately after the first scan.

- [NO]DECtalk --- Specifies whether DECtalk is to be triggered immediately after the first scan.

- [NO]MAILBOX --- Specifies whether mailbox messages are to be sent during the first scan.

The defaults are ACTION_ROUTINE, DECtalk, and MAILBOX.

/INFORMATION="message text"
Informational text to be stored in the Watchdog Manager. This is useful when running more than one Watchdog Manager process.

/DISCARD=(item,...)
The default is not to discard any items. Valid items are:

- MESSAGES --- Directs the Watchdog Manager to remove all existing messages before reconfiguring. Otherwise, the event messages received in the first scan after the reconfigure are merged into the existing event message list.

- DISABLED_NODES --- Directs the Watchdog Manager to disregard the disabled status of all nodes in the configuration prior to the reconfigure. The default leaves all nodes disabled that were disabled before the reconfiguration.

- ALL --- Performs the same function as /DISCARD=(MESSAGES, DISABLED_NODES).

/WAIT, /NOWAIT (D)
The /WAIT qualifier specifies that polling of the Watchdog Agent processes does not begin until a subsequent POLL command is entered. Using /WAIT enables the user to disable nodes and to set a log file, polling interval, and other parameters before polling starts. The default is /NOWAIT which directs polling to begin immediately.

Note: After a START CONSOLIDATOR /WAIT or RECONFIGURE /WAIT command, the Watchdog Manager remains in an initialization state until it receives the POLL command. The Watchdog Manager cannot be reconfigured again until you have issued the POLL command.

Description

RECONFIGURE sends a request to the selected Watchdog Manager to read the profile and rebuild the configuration data structures according to the supplied parameters.

RECONFIGURE causes a running SHOW EVENTS /CONTINUOUS display to return the "Reconfiguring" and "Synchronizing" informational messages.

The highlight time and scroll settings of a running continuous event display are not affected by the reconfiguration.

Example

```
SNS> RECONFIGURE /FIRST_SCAN=(NOMAILBOX,NODECtalk,NOACTION_ROUTINE)
```

This command reconfigures the Watchdog Manager using the existing profile (which may have been edited) and inhibits first scan action on the mailbox, DECtalk, and action routine items.

SET

Overview

Changes Watchdog Manager functions.

Format

SET option

Options

- COLLECTING
- WATCHDOG MANAGER
- LOG
- POLLING_INTERVAL

Description

The SET command directs the Watchdog Manager to change the specified function.

Related Commands

SHOW

Examples

Examples of each option are provided on the following pages.

SET COLLECTING

Overview

Sets the time range for the collecting of event messages.

Format

SET COLLECTING /qualifier...

Qualifiers

/SINCE=time
Collects event messages with event times since the specified time.

/BEFORE=time
Collects event messages with event times before the specified time.

Description

The SET COLLECTING command sets a time range for the collecting of event messages. Events with time-stamps after the SINCE time and before the BEFORE time are held in the Watchdog Manager event message list.

Examples

```
SNS> SET COLLECTING /SINCE=15-NOV-2004
```

This command sets collecting of event messages that have appeared since 15 November 2004 at 00:00 (midnight).

```
SNS> SET COLLECTING /SINCE=15-NOV-2004:09:0:0
/BEFORE=13-DEC-2004:18:30:0)
```

This command sets collecting of event messages that have appeared between 15 November 2004 at 9:00 a.m. and 13 December 2004 at 6:30 p.m.

SET CONSOLIDATOR

Overview

Sets the Watchdog Manager process for receiving controller commands.

Format

SET CONSOLIDATOR identifier

Parameters

identifier
Numeric identifier of the Watchdog Manager process to receive and respond to controller commands. The identifier can also be a logical name that represents a numeric value.

Description

The SET CONSOLIDATOR command sets the Watchdog Manager process to receive and respond to controller commands.

Watchdog Managers have the process name SNS$CONS_nnnn where nnnn is the Watchdog Manager identifier. The SET CONSOLIDATOR command verifies the existence of the Watchdog Manager process specified by the identifier. If the Watchdog Manager process exists, the command defines the logical name SNS$CONSOLIDATOR_ID to the value of nnnn. :set

The DCL command SHOW LOGICAL SNS$* shows the identifier value currently defined by SNS$CONSOLIDATOR_ID.

Related Commands

- SHOW CONSOLIDATOR
- START CONSOLIDATOR
- STOP CONSOLIDATOR

Example

```
SNS> SET CONSOLIDATOR 1234
```

This command verifies that Watchdog Manager process SNS$CONS_1234 exists, then sets the Watchdog Manager to receive controller commands.

SET LOG

Overview

Selects the log file for the Watchdog Manager to write to.

Format

SET LOG filename

Parameters

filename
Name of the log file for the Watchdog Manager to write log data. The default is SNS$LOG.DAT in your default directory.

Description

The SET LOG command specifies the file for the Watchdog Manager to log event status and notification information then issues an ENABLE LOG function.

The START CONSOLIDATOR command uses the default log file SNS$LOG.DAT in your default directory but with logging disabled. If you enter the ENABLE LOG command without first using the SET LOG command, logging to the default log file is enabled.

Related Commands

- DISABLE LOG
- ENABLE LOG
- SHOW LOG

Example

```
SNS> SET LOG SNS$TEMP.LOG
```

This command closes the current logs file and opens a new one called SNS$TEMP.LOG.

SET POLLING_INTERVAL

Overview

Sets the polling and notification time interval for the Watchdog Manager.

Format

SET POLLING_INTERVAL seconds

Parameters

seconds
Number of seconds in the time interval.

Description

The SET POLLING_INTERVAL command sets the time interval between polling and notification operations in the Watchdog Manager. The seconds parameter specifies the number of seconds that the Watchdog Manager waits after the last poll of a Watchdog Agent process or after the last invocation of an action routine notification, DECtalk notification, or mailbox output before starting another polling sequence. A polling sequence starts by polling the Watchdog Agent process on the first node in the profile.

Example

```
SNS> SET POLLING_INTERVAL 180
```

This command sets the polling interval to three minutes.

SHOW

Overview

Displays the state of specified Watchdog Manager functions.

Format

SHOW option

Options

- CONSOLIDATOR
- EVENTS
- EVENTS /CONTINUOUS
- LOG
- MESSAGE

Description

The SHOW command displays information for the specified Watchdog Manager function.

Related Commands

SET

Examples

Examples of each option are provided on the following pages.

SHOW CONSOLIDATOR

Overview

Displays configuration information about Watchdog Manager processes.

Format

SHOW CONSOLIDATOR [identifier] [/qualifier...]

Parameters

identifier
Numeric identifier from the process name SNS$CONS_nnnn. The identifier can also be a logical name that represents a numeric value.

If you do not give the identifier, and use the SHOW CONSOLIDATOR command without the /ALL qualifier, the currently SET CONSOLIDATOR process is shown (as defined in SNS$CONSOLIDATOR_ID).

Qualifiers

/ALL
Displays brief or full information for all Watchdog Manager processes on the system that are enabled by protections and privileges.

/BRIEF | /FULL
The /FULL qualifier displays all of the information listed in the following description. The /BRIEF qualifier displays only the identifier and informational text. The default is /BRIEF.

/OUTPUT=filename
Name of the file to receive the information. The default is the SYS$OUTPUT device.

Description

The SHOW CONSOLIDATOR command displays the following information for a Watchdog Manager process:

- Numeric identifier (nnnn in the SNS$CONS_nnnn process name) and version.

- Informational text specified by the /INFORMATION qualifier from the START CONSOLIDATOR or RECONFIGURE command.

- Profile file name.

- Log file name and the enabled or disabled status.

- Enabled or disabled state of DECtalk, mailbox, and action routines. If issued during the wait phase after the START CONSOLIDATOR or RECONFIGURE command, the SHOW CONSOLIDATOR command displays the first scan that enables or disables these functions.

- Polling interval.

- Event since and before settings.

  Watchdog Agent information: node names, Watchdog Agent versions, polling enabled or disabled status.

Note: Some settings are not displayed until the Watchdog Manager starts the next Watchdog Agent polling sequence.

Related Commands

- SET CONSOLIDATOR
- START CONSOLIDATOR
- STOP CONSOLIDATOR

Example

```
SNS> SHOW CONSOLIDATOR 1234 /FULL
```

This command displays all of the information listed in the previous description about Watchdog Manager process SNS$CONS_1234.

SHOW EVENTS

Overview

Displays event messages from the event message list maintained by the selected Watchdog Manager (defined in SNS$CONSOLIDATOR_ID).

Format

SHOW EVENTS [/qualifier...]

Qualifiers

/PRIORITY=HIGH | LOW | BOTH (D)
Displays high or low priority messages or messages of both priorities. The default is BOTH.

/HIDDEN, /NOHIDDEN (D)
The /HIDDEN qualifier displays only those event messages marked as hidden by the HIDE command. The /NOHIDDEN qualifier displays only the unhidden messages. The default is /NOHIDDEN.

/EVENT_CODES=(code,...)
Displays event messages for the specified event codes. The default is to display messages for all event codes.

/NODES=(name,...)
Displays events only from the specified nodes. The default is to display events from all enabled nodes in the profile.

/SINCE=time
Displays all events with event times since the specified time.

/BEFORE=time
Displays all events with event times before the specified time.

Note: The /SINCE or /BEFORE time specification must fit within the /SINCE and /BEFORE time range used when starting or reconfiguring a Watchdog Manager or no event messages are displayed. The default is to display all event messages held by the Watchdog Manager regardless of event time.

/OUTPUT=filename
Name of the file to contain the event list. The default is the SYS$OUTPUT device.

Description

The SHOW EVENTS command displays the event messages in a list of high priority messages followed by low priority messages and requires a buffered I/O byte count quota (BYTLM) of at least 15000.

The SHOW EVENTS command provides a snapshot of the event messages held in the Watchdog Manager list. See the SHOW EVENTS /CONTINUOUS command description for a continuous event status display.

Note: The controller must synchronize with the polling and notification operation of the Watchdog Manager (a synchronizing informational message is displayed). If a large number of nodes are being polled with a large number of event messages, there is a noticeable delay before the Watchdog Manager process displays the first event message.

Example

```
SNS> SHOW EVENTS /SINCE=18-OCT-2004 /BEFORE=15-NOV-2004:18:30:0
```

This command displays both high and low priority event messages that appeared between 18 October 2004 at 00:00 (midnight) and 15 November 2004 at 6:30 p.m.

SHOW EVENTS /CONTINUOUS

Overview

Starts a continuous event status display from the event message list maintained by the selected Watchdog Manager (defined in SNS$CONSOLIDATOR_ID).

This command requires a video display and cannot be used with a hardcopy terminal.

Format

SHOW EVENTS /CONTINUOUS [/qualifier...]

Qualifiers

/PRIORITY=HIGH | LOW | BOTH (D)
Displays high or low priority messages or messages of both priorities. The default is BOTH.

/HIDDEN, /NOHIDDEN (D)
The /HIDDEN qualifier displays only those event messages marked as hidden by the HIDE command. The /NOHIDDEN qualifier displays only the unhidden messages. The default is /NOHIDDEN.

/EVENT_CODES=(code,...)
Displays event messages for the specified event codes. The default is to display messages for all event codes.

/NODES=(name,...)
Displays events from the specified nodes. The default displays events from all enabled nodes in the profile.

/SINCE=time
Displays all events with event times since the specified time.

/BEFORE=time
Displays all events with event times before the specified time.

Note: The /SINCE or /BEFORE time specification must fit within the /SINCE and /BEFORE time range used when starting or reconfiguring a Watchdog Manager or no event messages are displayed. The default is to display all event messages held by the Watchdog Manager regardless of event time.

/HIGHLIGHT_TIME=hh:mm:ss
Specifies the interval for which an event message is highlighted in the display after the event is generated or updated.

/ENABLE=SCROLLING
Enables the scrolling display of all screens of event messages.

/DISABLE=SCROLLING
Displays only the screen with the most recent event messages.

Description

The SHOW EVENTS /CONTINUOUS command starts a continuous event status display and requires a buffered I/O byte count quota (BYTLM) of at least 15000.

If there is more than one screen, you can:

■ Press the Next Screen key to display the next screen of event messages. The right arrow key has the same function as the Next Screen key.

■ Press the Prev Screen key to display the previous screen of event messages. The left arrow key has the same function as the Prev Screen key.

■ Press the F10 function key or press Ctrl/Z, Ctrl/C, or Ctrl/Y to terminate the display and return to the prompt.

These are the only available command functions while the continuous event status display is active.

Note: The controller displays an informational message stating that it is synchronizing with the polling and notification operation of the Watchdog Manager. If a large number of nodes are being polled with a large number of event messages, there is a noticeable delay before the Watchdog Manager process displays the first event message.

Example

```
SNS> SHOW EVENTS /CONTINUOUS /PRIORITY=HIGH /SINCE=15-NOV-2004:12:0:0
```

This command starts a continuous display of high priority messages that have appeared since 15 November 2004 at 12:00 (noon).

SHOW LOG

Overview

Displays the selected log file.

Format

SHOW LOG [filename] [/qualifier...]

Parameters

filename
Name of the log file to be shown. If not given, the default shows the log file for the Watchdog Manager process defined in SNS$CONSOLIDATOR_ID.

Qualifiers

/OUTPUT=filename
Specifies a new file to contain the SHOW LOG output. The default is SYS$OUTPUT.

/SINCE=time
Selects the list of messages written to the log file since the specified time.

/BEFORE=time
Selects the list of messages written to the log file before the specified time.

Note: The time contained in an event message records the time that the event was detected. The /SINCE and /BEFORE times specify the time that the entry was written to the log file, not the time that the event was detected.

/EVENT_CODES=(code,...)
Enables the output of event log messages for the specified event codes. The default is to display messages for all event codes.

/NODES=(name,...)
Displays the log files only for the selected nodes. The default displays events from all nodes in the profile.

/RECORD_TYPE=(name,...)

Displays the log files only for the selected record types. Valid record types are:

- START_STOP — Shows the starts, stops, and reconfigures of the Watchdog Manager process.

- MESSAGE — Shows the addition, update, and removal of any event and external messages.

- ACTION_ROUTINE — Shows entries related to action routines and their status.

- DECtalk — Shows entries related to DECtalk calls and their status.

- MAILBOX — Shows entries related to OpenVMS mailbox outputs and their status.

Description

The SHOW LOG command displays the log file written by a Watchdog Manager.

Note: To only display messages for a particular event you must specify both the /EVENT_CODES and /RECORD_TYPE qualifiers.

Related Commands

- SET LOG
- DISABLE LOG
- ENABLE LOG

Example

```
SNS> SHOW LOG T.LOG
```

This command displays the log file T.LOG.

SHOW MESSAGE

Overview

Removes the hidden state of an event message in the Watchdog Manager list of messages. Hidden messages can be either built-in or external.

Format

SHOW MESSAGE "node_name message text" [/qualifier]

Parameters

"node_name message text"
Event message text for which hidden status is to be enabled, where the first word must be the node name or cluster alias. All messages matching the subsequent message text are enabled.

Qualifiers

/LOG, /NOLOG (D)
The /LOG qualifier causes an informational message to be displayed if the command is successful. The /NOLOG qualifier inhibits the informational message. The default is /NOLOG.

Description

The SHOW MESSAGE command directs the Watchdog Manager to restore the display of event or external messages that are hidden in its list of event messages. The command only affects messages in the Watchdog Manager and does not affect messages in a Watchdog Agent list.

The first word of the message text must be the node name or cluster alias as displayed by the SHOW EVENTS/HIDDEN command. For example, if the hidden message is "12-OCT 03:45 NODEA unreachable," the SHOW MESSAGE command parameter must be "NODEA unreachable." When entering the message, only one space is required between the name and remaining text (even though the SHOW EVENTS display line pads the field to six spaces).

The SHOW MESSAGE command also resets the hidden status of all messages that begin with "name message text." Thus, SHOW MESSAGE "NODEB" resets the hidden status for all event messages from NODEB.

Related Commands

HIDE MESSAGE

Example

```
SNS> SHOW MESSAGE "NODEA"
```

This command restores the display of all event messages for NODEA.

START CONSOLIDATOR

Overview

Starts a detached Watchdog Manager process.

Format

START CONSOLIDATOR [/qualifier...]

Qualifiers

/PROFILE=filename
File name of the profile to be used by the Watchdog Manager process. The default is SNS$PROFILE.DAT in your default directory.

/FIRST_SCAN=(option,...)
Enables or disables notification action on the first scan of the Watchdog Manager process, which can contain old messages. Valid options are:

- [NO]ACTION_ROUTINE — Specifies whether action routines are to be triggered immediately after the first scan.

- [NO]DECtalk — Specifies whether DECtalk is to be initiated immediately after the first scan.

- [NO]MAILBOX — Specifies whether mailbox messages are to be sent during the first scan.

The defaults are ACTION_ROUTINE, DECtalk, and MAILBOX.

/INFORMATION="message text"
Informational text to be stored in the Watchdog Manager process. This is useful when running more than one Watchdog Manager process.

/ACCESS=(option,...)
Specifies access to the Watchdog Manager process in addition to the owner access. Valid options are [NO]SYSTEM, [NO]GROUP, and [NO]WORLD. The defaults are NOSYSTEM, NOGROUP, and NOWORLD.

/UIC=[m,n] | [name] | [group,name]
Specifies the user identification code (UIC) under which the Watchdog Manager runs, where m,n is the numeric group and user codes, name is the user name, and group is the group name. The UIC must be enclosed in brackets ([]) as shown. The default is the current UIC.

/OUTPUT=filename
Name of the file to receive event messages and any other text sent by the
Watchdog Manager to the SYS$OUTPUT device. The default file name is
SNS$CONSOLIDATOR_OUTPUT.LOG.

/ERROR=filename
Name of the file to receive event messages sent by the Watchdog Manager to
SYS$ERROR. The default file name is SNS$CONSOLIDATOR_ERROR.LOG.

/WAIT, /NOWAIT (D)
Use /WAIT to delay the polling of Watchdog Agent processes until the first
POLL command is executed. This enables the user to disable nodes and to set the
log file, polling interval, and other parameters before polling starts. Use
/NOWAIT to begin polling immediately. The default is /NOWAIT.

Description

The START CONSOLIDATOR command creates a detached Watchdog Manager
process and passes configuration parameters to the process from the specified
profile. The process name SNS$CONS_nnnn is created where nnnn is the
numeric identifier of the Watchdog Manager process and is also the unit number
of the Watchdog Manager command input mailbox.

When the Watchdog Manager process starts, the logical name
SNS$CONSOLIDATOR_ID :startis set to the default numeric identifier value to
direct controller commands to the process. The DCL command SHOW
LOGICAL SNS$* shows the identifier value currently defined by
SNS$CONSOLIDATOR_ID.

Your process requires the following privileges:

- CMKRNL or DETACH to start a Watchdog Manager under another UIC

- CMKRNL to start a Watchdog Manager that must submit batch action
  routines to users other than the owner of the Watchdog Manager

- OPER, SYSPRV, or SETPRV to start a Watchdog Manager that must reduce
  the number of disk error count messages that apply to the same disk in a
  VMScluster system

Related Commands

- SET CONSOLIDATOR

- SHOW CONSOLIDATOR

- STOP CONSOLIDATOR

Examples

You can start a Watchdog Manager process and assign a logical name to the process as follows:

```
$ SENSE START CONSOLIDATOR /PROFILE=SNS$PROFILE
$ T_CONS = F$TRNLNM( "SNS$CONSOLIDATOR_ID" )
$ ASSIGN 'T_CONS' MY_CONS
```

The first of the preceding commands starts a Watchdog Manager process using the default profile SNS$PROFILE.DAT. The other two commands assign the logical names. You can then use MY_CONS instead of the numeric identifier with the SET CONSOLIDATOR, SHOW CONSOLIDATOR, and STOP CONSOLIDATOR commands, for example:

```
$ SENSE WATCHDOGS SHOW CONSOLIATOR MY_CONS /FULL
```

STOP CONSOLIDATOR

Overview

Stops a Watchdog Manager process.

Format

STOP CONSOLIDATOR identifier [/qualifier]

Parameters

identifier
Numeric identifier of the SNS$CONS_nnnn Watchdog Manager process to be
stopped. The identifier can also be a logical name that represents a numeric
value. If the identifier is not specified, the command stops the process currently
defined by SNS$CONSOLIDATOR_ID.

Qualifiers

/ALL
Stops all Watchdog Manager processes on the system that are enabled by
protections and privileges. This provides an orderly shutdown of Watchdog
Manager processes during system shutdown procedures.

Description

The STOP CONSOLIDATOR command directs the Watchdog Manager process to terminate. It also deletes the logical name SNS$CONSOLIDATOR_ID if it refers to the stopped Watchdog Manager process.

Related Commands

- SET CONSOLIDATOR

- SHOW CONSOLIDATOR

- START CONSOLIDATOR

Example

```
SNS> STOP CONSOLIDATOR 1234
```

This command stops Watchdog Manager process SNS$CONS_1234.

Chapter

4

Profile Management

A profile is a data file that defines the nodes to be scanned by the consolidator. It also defines the types of notification actions to be performed when an abnormal event occurs. The default profile SNS$PROFILE.DAT is provided but you can create and modify different profiles using one of the following Watchdog Manager facilities:

■   The online profile editor

■   The profile editor windows facility on a DECwindows Motif display

■   A command file containing profile editor commands

You can then specify a different profile each time you start a Watchdog Manager process.

This chapter provides guidelines for creating a profile and adding entries using the profile editor terminal keyboard commands. The Watchdog Manager profile editor windows facility enables you to select profile-editing functions with the pointer and to add character string information from the keyboard. The "Profile Editor Commands" chapter provides detailed information about the profile editor commands.

Gathering System Information

To use the System Watchdog software effectively, it is necessary to first collect the required system information and plan the use of the software. Following are the tasks for collecting the necessary information:

1.   Identify all of the nodes to be polled.

2.   Determine the events to be monitored on each node.

3.   Identify the nodes that will monitor events not detected by the System Watchdog software.

These nodes generate external messages for detected events.

Note: Each node that generates external messages must have a user-written program or procedure that adds the messages to an external message list in the system's Watchdog Agent memory. The Watchdog Manager software assigns the EXT event code to each external message.

4. Determine the notification options (action routine, DECtalk, and OpenVMS mailbox sets) to be used for taking action on user-generated external events or on events detected by the Watchdog Manager software.

5. Determine the names to be assigned to the notification options.

6. Identify nodes that have similar event coverage and notification options so you can place them in the same event class.

7. Determine the names to be assigned to the event classes.

8. Identify nodes that have similar external message coverage and notification options so they can be placed in the same external message class.

9. Determine the names to be assigned to the external message classes.

10. Determine the node objects to be monitored on each node.

The "User Programming" chapter provides guidelines for developing action routines and OpenVMS mailbox reader programs, and using the callable interface for external messages.

The following is a list of the system information used in the Adding Profiles Section for purposes of illustration. The first two nodes run critical applications. The next two nodes run mostly software applications. The last three nodes are VAXstation systems connected by an Ethernet network.

Node Name	Event Class	External Message Class	Action Routine Set	Mailbox Set	DECtalk Set
ALPHA	CRITCL			TO_MGR	CALL_MGR
BRAVO	CRITCL			TO_MGR	CALL_MGR
CHARLY	SFTWR	SITE_APPL1		TO_MGR	
DELTA	SFTWR			TO_MGR	
ECHO	VAXSTA	SITE_APPL2	FIXIT[1]	TO_SUPR	
FOXTRT	VAXSTA		FIXIT[1]	TO_SUPR	
GEORGE	VAXSTA		FIXIT[1]	TO_SUPR	

[1]The procedure file is SYS$DISK:[SYSTEM]SYSFIX.COM.

Creating a Profile

While learning to build a profile, you can start with a subset of your final configuration. You can then add entries and modify parameters later to provide more complete coverage. A command file of profile editor commands is useful for reviewing your entries and making any changes before creating the final profile. You can then execute the command file to create the profile.

When you have all or most of the information you need, you can enter online profile editor commands from the keyboard or use the DECwindows Motif profile editor.

The software verifies each entry that is added. You must add the action routine sets, DECtalk sets, and mailbox sets before they can be referenced by the classes or external message classes. You must then add the classes and external message classes before they can be referenced by the nodes.

Add the entries in the following order:

1. Enter the online profile editor.

2. Add action routine sets with the ADD ACTION_ROUTINE_SET command.

3. Add mailbox sets with the ADD MAILBOX_SET command.

4. Add DECtalk sets with the ADD DECtalk_SET command.

5. Modify the DECtalk sets with the MODIFY DECtalk_SET command.

6. Add event classes with the ADD CLASS command.

7. Modify the event classes with the MODIFY CLASS command.

8. Add external message classes with the ADD EXTERNAL_MESSAGE_CLASS command.

9. Modify the external message classes with the MODIFY EXTERNAL_MESSAGE_CLASS command.

10. Add each node to be polled with the ADD NODE command.

11. Add node objects to the polled nodes with the ADD NODE node_object command.

12. List the Watchdog Manager parameters with the SHOW CONSOLIDATOR command. If necessary, set the parameters with the SET CONSOLIDATOR command.

13. List the display parameters with the SHOW DISPLAY command. If necessary, set the parameters with the SET DISPLAY command.

14. List the profile contents with the SHOW ALL command. Add any further entries that are necessary.

15. Close the profile with the EXIT command.

Adding Profile Entries

This section provides step-by-step examples of entries being added to a new profile. If you have questions about how a command is used, see the "Profile Editor Commands" chapter for a description of the command and qualifiers.

The guidelines provided in this section apply whether you are building a profile with the online profile editor or profile editor window. The profile editor window selects the same command functions and parameters as the online profile editor.

Step 1. Invoke the Profile Editor

See the "Controller Commands" chapter for a detailed description of the EDIT PROFILE command.

Online Profile Editor

The following commands invoke the online profile editor from DCL or the Watchdog Manager controller:

```
$ SENSE WATCHDOGS
SNS> EDIT PROFILE SNS$MY_PROFILE.DAT
SNS$EDIT>

$ SENSE WATCHDOGS EDIT PROFILE SNS$MY_PROFILE.DAT
SNS$EDIT>
```

Profile Editor Windows

The following commands invoke the profile editor window from DCL or from the Watchdog Manager controller:

```
$ SENSE WATCHDOGS EDIT PROFILE SNS_PROFILE.DAT /INTERFACE=DECwindows

SNS> EDIT PROFILE SNS$MY_PROFILE.DAT /INTERFACE=DECwindows
```

Step 2. Add Action Routine Sets

If you are using action routine sets, add each set with all necessary qualifiers.

An action routine set invokes a user-written program or procedure that corrects a software-generated problem. The following commands add action routine set FIXIT as a batch queue and action routine PURGE as a spawned subprocess:

```
SNS$EDIT> ADD ACTION_ROUTINE_SET FIXIT /PROCEDURE=SYS$DISK:[SYSTEM]SYSFIX.COM

SNS$EDIT> ADD ACTION_ROUTINE_SET PURGE /MODE=SPAWN /COMMAND="PURGE [...]"
```

The default is batch queue. If batch queue is used, the complete path for the service routine, including the file extension, must be specified.

Step 3. Add Mailbox Sets

If you are using mailbox sets, add each set with the mailbox name and recipient name.

A mailbox set writes event information to an OpenVMS mailbox. A user-written mailbox reader program must be in place to read and process the message. The following commands add the mailbox sets TO_MGR and TO_SUPR to the profile:

```
SNS$EDIT> ADD MAILBOX_SET TO_MGR /MAILBOX=MBA1234:

SNS$EDIT> ADD MAILBOX_SET TO_SUPR /MAILBOX=SHS$MAILBOX
```

Step 4. Add DECtalk Sets

If you are using DECtalk sets, add each set with all necessary qualifiers.

A DECtalk set initiates a call through a DTC01 or DTC03 DECtalk option to a specified telephone number and delivers a computer-generated voice message to a person or recording device. The following command adds the DECtalk set CALL_MGR to the profile:

```
SNS$EDIT> ADD DECTALK_SET CALL_MGR /LINE=LTA002: /VOICE=DEEP_FEMALE -
_SNS$EDIT> /MESSAGE_TYPE=BRIEF /KEYSTROKE_TRIALS=3
```

The ADD DECtalk_SET command provides most of the required qualifiers. Some examples of the additional qualifiers provided by the MODIFY DECtalk_SET command are shown in step 5.

Step 5. Modify DECtalk Sets

Modify each DECtalk set to specify the additional qualifiers. The following commands specify the 24-hour call schedule, the valid telephone numbers (up to 16 characters), and the online operators for the DECtalk set CALL_MGR previously added to the profile:

```
SNS$EDIT> MODIFY DECTALK_SET CALL_MGR /SCHEDULE=00000222111001111111000222
          /DAY=WEEKDAYS

SNS$EDIT> MODIFY DECTALK_SET CALL_MGR /SCHEDULE=00000000002222000000000000
          /DAY=WEEKENDS

SNS$EDIT> MODIFY DECTALK_SET CALL_MGR /PHONE_NUMBER=16175551234
          /OPERATOR=1/DAY=WEEKDAYS

SNS$EDIT> MODIFY DECTALK_SET CALL_MGR /PHONE_NUMBER=16175553456
          /OPERATOR=2/DAY=WEEKDAYS

SNS$EDIT> MODIFY DECTALK_SET CALL_MGR /PHONE_NUMBER=16175559876
          /OPERATOR=2/DAY=WEEKENDS
```

Step 6. Add Event Classes

Add each event class with the class name.

A class is a collection of events that the Watchdog Manager software can monitor. If you do not specify the class name when adding a node, the profile editor assigns the node to the class DEFAULT.

One class can be used to define an OpenVMS cluster system or several connected systems. However, other classes can be used to define groups of systems, such as nodes running critical applications, nodes used for program development, or a group of VAXstation systems. The following commands add event classes CRITCL, SFTWR, and VAXSTA to the profile:

```
SNS$EDIT> ADD CLASS CRITCL

SNS$EDIT> ADD CLASS SFTWR

SNS$EDIT> ADD CLASS VAXSTA
```

Step 7. Modify Event Classes

Modify each event class to specify the event codes to be monitored, the event priority level, and the notification options to be used. The following commands customize the event classes CRITCL, SFTWR, and VAXSTA that were previously added to the profile:

```
SNS$EDIT>  MODIFY CLASS CRITCL /EVENT=(UNR,BQP,PRO,CPU,MEM,DSK)
          /PRIORITY=HIGH /DECTALK_SET=CALL_MGR /MAILBOX=TO_MGR /SEVERITY=WARNING
```

```
SNS$EDIT> MODIFY CLASS SFTWR /EVENT=(UNR,BQP,PRO,CPU,MEM,DSK
          /PRIORITY=LOW /MAILBOX_SET=TO_MGR /SEVERITY=ERROR

SNS$EDIT> MODIFY CLASS VAXSTA /EVENT=(UNR,CPU,MEM,DSK
          /PRIORITY=LOW /ACTION=FIXIT /MAILBOX_SET=TO_SUPR /SEVERITY=INFORMATIONAL
```

Step 8. Add External Message Classes

If you are monitoring external messages, add each external message class with the class name.

External message classes must be added for nodes that report events outside the scope of the System Watchdog software by a user-written program or a DCL command procedure. The following commands add the external message classes PURGE_DSK2 and PURGE_DSK1 to the profile:

```
SNS$EDIT> ADD EXTERN PURGE_DSK2

SNS$EDIT> ADD EXTERN PURGE_DSK1
```

Step 9. Modify External Message Classes

Modify each external message class previously added to the profile. For each external message class, specify the match string, the priority level for the match string, and the notification options to be used by the class:

```
SNS$EDIT> MODIFY EXTERNAL_MESSAGE_CLASS PURGE_DSK2 /POSITION=1 /INSERT
          /TEXT="DISK2 first message string" /PRIORITY=HIGH /ACTION=FIXIT

SNS$EDIT> MODIFY EXTERNAL_MESSAGE_CLASS PURGE_DSK2 /POSITION=2 /INSERT
          /TEXT="DISK2 second message string" /PRIORITY=HIGH /ACTION=FIXIT

SNS$EDIT> MODIFY EXTERNAL_MESSAGE_CLASS PURGE_DSK2 /POSITION=3 /INSERT
          /TEXT="DISK2 third message string" /PRIORITY=HIGH /ACTION=FIXIT

SNS$EDIT> MODIFY EXTERNAL_MESSAGE_CLASS PURGE_DSK1 /POSITION=1 /INSERT
          /TEXT="DISK1 first message string" /PRIORITY=LOW /ACTION=FIXIT

SNS$EDIT> MODIFY EXTERNAL_MESSAGE_CLASS PURGE_DSK1 /POSITION=2 /INSERT
          /TEXT="DISK1 second message string" /PRIORITY=LOW /ACTION=FIXIT
```

Step 10. Add the Nodes to be Polled

Add each node to be polled. Specify the event class and any external message class.

The following commands add the nodes to the profile. If you do not specify the class, the software assigns the node to the class DEFAULT.

```
SNS$EDIT> ADD NODE ALPHA /CLASS=CRITCL

SNS$EDIT> ADD NODE BRAVO /CLASS=CRITCL
```

```
SNS$EDIT> ADD NODE CHARLY /CLASS=SFTWR /EXTERNAL_MESSAGE_CLASS=PURGE_DSK2

SNS$EDIT> ADD NODE DELTA /CLASS=SFTWR

SNS$EDIT> ADD NODE ECHO /CLASS=VAXSTA /EXTERNAL_MESSAGE_CLASS=PURGE_DSK1

SNS$EDIT> ADD NODE FOXTRT /CLASS=VAXSTA

SNS$EDIT> ADD NODE GEORGE /CLASS=VAXSTA
```

Note: Each node must be added separately. Cluster aliases cannot be used with the ADD NODE command. The Watchdog Manager uses DECnet or TCP/IP to individually connect with each node and request event information.

Step 11. Add Node Objects for the Nodes Being Polled

Add any node object entries for nodes requiring node object coverage. Each node object must be added separately for each node. The following commands add node objects to the nodes added to the profile in step 10:

```
SNS$EDIT> ADD NODE ALPHA BATCHJOB GNUBAT SYSMAN SNS$BAT

SNS$EDIT> ADD NODE BRAVO BATCHJOB GNUBAT SYSTEM SYS$BATCH  !Uses defaults

SNS$EDIT> ADD NODE ALPHA LOGINS/LIMIT=12

SNS$EDIT> ADD NODE BRAVO LOGINS/LIMIT=20

SNS$EDIT> ADD NODE BRAVO EXCLUSION ETH *
```

Step 12. Set Consolidator Parameters

Evaluate and set the Watchdog Manager parameters, if necessary. The SHOW CONSOLIDATOR command displays the current Watchdog Manager settings and attributes.

If necessary, change the polling interval and enable or disable the notification options by type. The following command sets and enables Watchdog Manager parameters in the profile:

```
SNS$EDIT> SET CONSOLIDATOR /POLL=120 /ENABLE=(ACTION_ROUTINE,MAILBOX,DECTALK)
```

Step 13. Set Display Parameters

Evaluate and set the display parameters, if necessary. The SHOW DISPLAY command lists the current display settings and attributes.

If necessary, set the priority levels, highlight time, and scrolling for the display. The following command sets the display parameters in the profile:

```
SNS$EDIT> SET DISP /PRIORITY=BOTH /HIGHLIGHT_TIME=0:5:0 /ENABLE=SCROLLING
```

Step 14. Show the Profile Contents

Use the SHOW ALL command to list the current profile entries and make any additions, if necessary, as described in the preceding steps.

The following command then closes the profile and terminates the profile editing session:

```
SNS$EDIT> EXIT
```

The EXIT command closes the profile and returns to the prompt from where you entered the EDIT PROFILE command. (The QUIT command aborts the profile and terminates the session.)

Additional Commands

The following commands provide functions to help you manage and maintain your profiles. See the "Profile Editor Commands" chapter for information on the following commands:

- The COPY command copies an existing entry, with all existing values, to a new entry that you can customize with the MODIFY command.

- The DELETE command deletes an entry that is not required in the updated profile.

- The HELP command provides online information for all profile editor commands.

- The SHOW command displays the current values for the specified entry or all entries.

- The SPAWN command spawns a subprocess that enables you to enter commands at the DCL level. The LOGOUT command returns to the profile editor.

Profile Contents Summary

The following is a summary of the parameters and attributes that a Watchdog Manager profile can provide to one or more Watchdog Managers.

For each node:

Node name
Class
External message class
Time difference
Network transport
DFS disks coverage enabled: event code list (DSS or SWL or neither).

For each missing batch job entry, if any:

Job name
Batch queue
User name
Interval

For the interactive log limit entry, if used:

Value
Interval

For each shadow set entry, if any:

Shadow set name
Full copy messages: On/Off
Merge messages: On/Off
Member count
Interval

For each stalled printer queue entry, if any:

Printer queue name
Interval

For each missing process entry, if any:

Process name
UIC
Interval

For each disk free blocks entry, if any:

Disk name
Threshold (percent or blocks)
Interval
Exclusion entries, if any:

Event_code/Wildcarded_name. Events with exclusions are Ethernet errors, disk errors, disk state, software write-locked disks, batch queue problems, device queue problems.

For each class:

Class name
For each built-in event:
Priority: High/Low/Not displayed/Not checked
Action routine set name, if any
DECtalk set name, if any
Mailbox set name, if any
Event severity: Success, Information, Warning,
Error, Fatal

For each external message class:

External message class name
Definitions of match strings or references to other external message classes:

Up to 64 definitions per external message class. Match strings can be up to 24 characters and can contain "%" and "*" wildcard characters. References to another external message class have the format "@name" where name is the name of the external message class.

For each match string definition:

Priority: High/Low/Not displayed/Not checked
Action routine set name, if any
DECtalk set name, if any
Mailbox set name, if any
Event severity: Success, Information,
Warning, Error, Fatal

For each action routine set:

    Action routine set name
    Mode: Batch/Spawn
    If Batch:
    User
    Command file name
    Queue name
    Log file: On/Off
    If Spawn:
    Command
    Log file name
    Log file: On/Off

For each DECtalk set:

    DECtalk set name
    DECtalk line
    DECtalk type: DTC01/DTC03
    Speech speed
    Voice type: Female/Child/Deep male/Deep female
     /Older male/Light female/All voices/Male
    Dialing type: Pulse/Tone
    Repeat count
    Message type: Full/Brief
    Keystroke trials
    Welcome text
    For each day of the week:
    Schedule for operator selection: 0/1/2 for each hour
    Delay for operator 1
    Phone number for operator 1
    Delay for operator 2
    Phone number for operator 2

For each mailbox set:

    Mailbox set name
    OpenVMS mailbox name or logical name

Display parameters:

    Active windows: High/Low/Both
    Highlight time
    Display scrolling: On/Off

Consolidator parameters:

    Polling interval
    DECtalk: On/Off
    Action routines: On/Off
    Mailbox output: On/Off

Profile Editor Commands

Overview

The online profile editor commands enable you to create, modify, or update Watchdog Manager profiles from your terminal keyboard.

The EDIT PROFILE command invokes the online profile editor and opens a profile in your default directory. The default profile is SNS$PROFILE.DAT. See the EDIT PROFILE command description in the "Controller Commands" chapter.

You can enter the online profile editor from either the Watchdog Manager controller prompt or the DCL prompt as follows:

```
$ SENSE WATCHDOGS
SNS> EDIT PROFILE filename
SNS$EDIT>

$ SENSE WATCHDOGS EDIT PROFILE filename
SNS$EDIT>
```

When you have completed your edits, use the EXIT command to update and close the profile and terminate the editing session. Use the QUIT command to abort the editing session without saving the changes.

You can edit an existing profile for output as a new profile with the /OUTPUT qualifier. You can also use the COPY command at the DCL level to copy an existing profile to a new profile with the same attributes. You can then use the DELETE and MODIFY commands to change the attributes of the new profile.

@

Executes a command file containing profile editor commands that create a new profile or update an existing profile.

Format

@filename

Parameters

filename
Name of the command file containing profile editor commands. The default file extension is .COM.

Description

The @ symbol executes a command file containing profile editor commands to create a new profile.

Related Commands

SHOW ALL /FORMAT=COMMANDS /OUTPUT=filename
If you invoke the profile editor on an existing profile, the SHOW ALL command outputs a command file you can modify and use to build a new profile with the @ command.

Example

```
SNS$EDIT>@ADD_MAILBOXES
```

This command executes the command file ADD_MAILBOXES.COM.

ADD

Overview

Adds the specified entry to the profile.

Format

ADD entry

Entries

- ACTION_ROUTINE_SET
- CLASS
- DECtalk_SET
- EXTERNAL_MESSAGE_CLASS
- MAILBOX_SET
- NODE
- NODE node_object

Description

The ADD command adds the specified entry to the profile.

Related Commands

- COPY
- DELETE
- MODIFY
- SHOW

Examples

Examples are provided for each option.

ADD ACTION_ROUTINE_SET

Overview

Adds an action routine set to the profile.

Format

ADD ACTION_ROUTINE_SET set_name /qualifier...

Parameters

set_name
Name of the action routine set to be added.

Qualifiers

/MODE=SPAWN | BATCH (D)
BATCH submits a command procedure to a batch queue. SPAWN executes a
DCL command by a spawned subprocess. The default is BATCH.

/USERNAME=username
User name under which the action routine is submitted as a batch job. Only
applies when /MODE=BATCH. The default user name is SYSTEM.

/PROCEDURE=proc_name
Name of the command procedure to be submitted as a batch job. The full path
name with file extension must be specified. Only applies, and is required, when
/MODE=BATCH. See the "User Programming" chapter for more information on
command procedures.

/QUEUE=queue_name
Name of the batch queue to which the procedure is to be submitted. Only applies
when /MODE=BATCH. The default is SYS$BATCH.

/COMMAND=command
The DCL command string to be executed by the spawned subprocess. Only
applies, and is required, when /MODE=SPAWN. See the "User Programming"
chapter for more information on command strings and procedures.

/OUTPUT=filename
Specifies an output file for writing the information written to SYS$OUTPUT by the spawned DCL command. Only applies when /MODE=SPAWN.

/LOG_FILE, /NOLOG_FILE (D)
Enables and disables writing to a batch or spawn mode output file. The default is /NOLOG_FILE.

Description

The ADD ACTION_ROUTINE_SET command adds an action routine set to the profile with all required parameters.

Example

```
SNS$EDIT> ADD ACTION_ROUTINE_SET PURGE_DISK2 /MODE=SPAWN
          /COMMAND="PURGE [...]"
```

This command adds the action routine set PURGE_DISK2.

ADD CLASS

Overview

Adds an event class to the profile.

Format

ADD CLASS class_name

Parameters

class_name
Name of the class to be added.

Description

The ADD CLASS command adds an event class to the profile. You must then use the MODIFY CLASS command to customize the class parameters.

Example

```
SNS$EDIT> ADD CLASS CRITICAL
```

This command adds the event class CRITICAL for nodes running critical applications.

ADD DECtalk_SET

Overview

Adds a DECtalk set to the profile.

Format

ADD DECtalk_SET set_name /qualifier...

Parameters

set_name
Name of the DECtalk set to be added.

Qualifiers

/LINE=port
Specifies the physical line, such as TXA0: or LTA100, that is connected to the DECtalk unit. This qualifier is required.

/TYPE=DTC01 | DTC03 (D)
Specifies the connected DECtalk unit type. The default is DTC03.

/SPEECH_SPEED=number
Specifies the speech speed in words per minute. The range is 120 to 350. The default is 120.

/VOICE=voice_type
Valid voice types are FEMALE, CHILD, DEEP_MALE, DEEP_FEMALE, OLDER_MALE, LIGHT_FEMALE, ALL_VOICES, or MALE. The default is CHILD.

/DIALING_TYPE=TONE | PULSE (D)
Specifies the dialing type. The default is PULSE.

/REPEAT_COUNT=number
Specifies the number of times the list of event messages is to be repeated when the call is answered. The range is 0 to 999. The default is 3.

/MESSAGE_TYPE=BRIEF | FULL (D)
FULL specifies that the full event message text is to be sent. BRIEF specifies that a simplified message is to be sent, for example,"Node has a disk near full." The default is FULL.

/KEYSTROKE_TRIALS=number
Specifies the number of times the Watchdog Manager repeats the prompt "Hello, this is DECtalk ... Dial any number to get my message." The user must dial a digit to receive the welcome message before the number of trials expires. A value of zero (/KEYSTROKE_TRIALS=0) inhibits the DECtalk prompt message and the first message sent is the welcome text. The range is 0 to 999. The default is 0.

/WELCOME_TEXT="message text"
Message introducing the list of event messages when the call is answered. This message is spoken after the DECtalk prompt message. The default is an empty string.

Description

The ADD DECtalk_SET command adds a DECtalk set to the profile with most of the required parameters. The MODIFY DECtalk_SET command provides an additional set of qualifiers for customizing the DECtalk set.

Example

```
SNS$EDIT> ADD DECtalk_SET CALL_HOME /LINE=LTA100:
```

This command adds the DECtalk set CALL_HOME to the profile.

ADD EXTERNAL_MESSAGE_CLASS

Overview

Adds an external message class to the profile.

Format

ADD EXTERNAL_MESSAGE_CLASS ext_class_name

Parameters

ext_class_name
Name of the external message class to be added.

Description

The ADD EXTERNAL_MESSAGE_CLASS command adds an external message class to the profile. The MODIFY EXTERNAL_MESSAGE_CLASS command must then be used to customize the class parameters.

Example

```
SNS$EDIT> ADD EXTERNAL_MESSAGE_CLASS APPLICATION
```

This command adds the external message class APPLICATION for nodes running software applications.

ADD MAILBOX_SET

Overview

Adds a mailbox set to the profile.

Format

ADD MAILBOX_SET set_name /qualifier

Parameters

set_name
Name of the mailbox set to be added.

Qualifiers

/MAILBOX=name
Physical or logical name of the OpenVMS mailbox to which event the messages are to be sent. This qualifier is required.

Description

The ADD MAILBOX_SET command adds a mailbox set to the profile and specifies the physical or logical name of the OpenVMS mailbox to receive the event messages.

Note: The mailbox reader program must create the OpenVMS mailbox and wait for event messages to be sent. Otherwise, the Watchdog Manager cannot send the event record to the OpenVMS mailbox and writes an error message to the log file if logging is enabled.

Example

```
SNS$EDIT> ADD MAILBOX_SET TO_OPERATOR /MAILBOX=OPER_MAILBOX
```

This command creates the mailbox set TO_OPERATOR for sending event messages to the OpenVMS mailbox assigned to the logical name OPER_MAILBOX.

ADD NODE

Overview

Adds a node to be polled to the profile.

Format

ADD NODE node_name [/qualifier...]

Parameters

node_name
Name of the node to be polled. Each node must be added separately. The cluster alias cannot be used.

Qualifiers

/CLASS=class_name
Name of the event class under which the node is to be monitored. The default event class is DEFAULT.

/EXTERNAL_MESSAGE_CLASS=ext_class_name
Name of the class to be used for external messages. The default external message class is DEFAULT.

/TIME_DIFFERENCE=time
Time difference between the polled node and the node running the Watchdog Manager. Time can be expressed as plus or minus, up to 12:00:00. The default is 0:0:0.

/DFS=(event_code,...), /NODFS (D)
Specifies whether DFS disks are covered by the specified event code. Valid event codes are SWL (software write locked) and DSS (disk state problem). If the qualifier is not given, the default is NODFS.

/TRANSPORT=TCPIP | DECnet (D)
Specifies the network transport for the Watchdog Manager to access the
Watchdog Agent running on the polled node. The default is DECnet.

Description

The ADD NODE command adds a node to be polled to the profile with all
required parameters.

Example

```
SNS$EDIT> ADD NODE NODEA /CLASS=CRITICAL /DFS=SWL
```

This command adds MODEA to the class CRITICAL with DFS disks included in
the notification of software write-locked events.

ADD NODE node_object

Overview

Adds a node-related object to the profile.

Format

ADD NODE node_name node_object [name2 [name3 [name4]]] [/qualifier...]

Parameters

node_name
Name of the node to which the node object is being added. Each node object must be added separately for each node. The cluster alias cannot be used.

node_object
Each node object must be added separately. Valid node objects are BATCHJOB, FREE_BLOCKS, LOGINS, PRINTER_QUEUE, PROCESS, SHADOW_SET, and EXCLUSION.

name2
Name of the node object being added for coverage. Each name must be added separately for each node object, except for LOGINS, which can only be added once for the node. Parameters name3 and name4 have different uses for each node object (see the following description).

Qualifiers

/INTERVAL=hh:mm:ss
Sets the polling interval for the node object being added. Applies to all node objects except EXCLUSION. The default is 00:10:00 (10 minutes) for all node objects, except SHADOW_SET, which is 01:00:00 (1 hour).

The polling interval for the node object does not cause polling to occur more frequently than normal Watchdog Manager polling of the Watchdog Agent nodes. For example, a value less than the Watchdog Manager polling interval, or a value of 0, causes the node object to be polled at every Watchdog Manager poll. A value 3 times longer than the Watchdog Manager polling interval causes the node object to be polled on every third Watchdog Manager poll.

Description

The ADD NODE node_object command adds an object to the specified node with all required parameters. Each node object must be added separately for each node. Valid node objects are:

- BATCHJOB

  name2 is the batch job name.

  name3 is the user name (the default is SYSTEM).

  name4 is the batch queue name (the default is SYS$BATCH).

- FREE_BLOCKS

  name2 is the disk name.

  Additional qualifiers:

  Either /PERCENT=percent or /BLOCKS=number is required.

- LOGINS

  Additional qualifiers:

  /LIMIT=n where n is the login limit comparison value.

- PRINTER_QUEUE

  name2 is the printer queue name (the default is SYS$PRINT).

- PROCESS

  name2 is the process name.

  name3 is the UIC. The UIC has the syntax of [m,n], [group,name], or [name] where m,n is the numeric group and user codes, group is the group name, and name is the user name. The UIC must be enclosed in brackets ([ ]) as shown. The [m,n] or [group,name] syntax must be in quotes because of the comma. The default UIC is [1,4].

- SHADOW_SET

  name2 is the shadow set name.

  Additional qualifiers:

  /FULL_COPY (D) | /NOFULL_COPY

  /MERGE_COPY | /NOMERGE_COPY (D)

  /MEMBERS=number (default is 2)

  For explanations of these qualifiers, see the Shadow Set Problem event description in the "Event Descriptions" chapter.

- ■ EXCLUSION

  name2 is the event code.

  name3 is the item to be excluded, such as a disk name or queue name, which can be specified with the wildcard (*). The default is the wildcard (*), which excludes all items. See the "Event Descriptions" chapter for events supporting exclusions.

Examples

```
SNS$EDIT> ADD NODE NODEA EXCLUSION SWL DAD*
```

This command specifies that no software write-locked events will be reported on NODEA for disks with names beginning with DAD.

```
SNS$EDIT> ADD NODE NODEB SHADOW_SET DSA111 /MEMBERS=2
          /FULL_COPY /NOMERGE_COPY /INTERVAL=0:5:0
```

This command sets shadow set DSA111 to be polled every 5 minutes, and to return an event message if there are zero, one, or more than two disks in the shadow set or if a full shadow copy is in progress. If there are two members, and a merge copy is in progress, no event messages are generated.

COPY

Overview

Copies the attributes of an existing entry to a new entry in the profile.

Format

COPY entry

Entries

- ACTION_ROUTINE_SET
- CLASS
- DECtalk_SET
- EXTERNAL_MESSAGE_CLASS
- MAILBOX_SET
- NODE

Description

The COPY command copies an existing profile entry to a new entry with the same attributes. The new entry can then be customized with the MODIFY command.

Related Commands

- ADD
- DELETE
- MODIFY
- SHOW

Examples

Examples are provided for each option.

COPY ACTION_ROUTINE_SET

Overview

Copies the attributes of an existing action routine set to a new action routine set.

Format

COPY ACTION_ROUTINE_SET set_name1 set_name2

Parameters

set_name1
Name of the action routine set to be copied.

set_name2
Name of the new action routine set to be created.

Description

The COPY ACTION_ROUTINE_SET command creates a new action routine set in the profile with the same attributes as an existing action routine set.

Example

```
SNS$EDIT> COPY ACTION_ROUTINE_SET PURGE_DISK2 PURGE_DISK3
```

This command creates a new action routine set PURGE_DISK3 with the same attributes as action routine set PURGE_DISK2.

COPY CLASS

Overview

Copies the attributes of an existing event class to a new event class.

Format

COPY CLASS class_name1 class_name2

Parameters

class_name1
Name of the event class to be copied.

class_name2
Name of the new event class to be created.

Description

The COPY CLASS command creates a new event class in the profile with the same attributes as an existing event class.

Example

```
SNS$EDIT> COPY CLASS CRITICAL MED_PRIORITY
```

This command creates a new class MED_PRIORITY with the same attributes as class CRITICAL.

COPY DECtalk_SET

Overview

Copies the attributes of an existing DECtalk set to a new DECtalk set.

Format

COPY DECtalk_SET set_name1 set_name2

Parameters

set_name1
Name of the DECtalk set to be copied.

set_name2
Name of the new DECtalk set to be created.

Description

The COPY DECtalk_SET command creates a new DECtalk set in the profile with the same attributes as an existing DECtalk set.

Example

```
SNS$EDIT>COPY DECtalk_SET CALL_HOME CALL_SUPPORT
```

This command creates a new DECtalk set CALL_SUPPORT with the same attributes as DECtalk set CALL_HOME.

COPY EXTERNAL_MESSAGE_CLASS

Overview

Copies the attributes of an existing external message class to a new external message class.

Format

COPY EXTERNAL_MESSAGE_CLASS ext_class_name1 ext_class_name2

Parameters

ext_class_name1
Name of the external message class to be copied.

ext_class_name2
Name of the external message class to be created.

Description

The COPY EXTERNAL_MESSAGE_CLASS command creates a new external message class in the profile with the same attributes as an existing external message class.

Example

```
SNS$EDIT> COPY EXTERNAL_MESSAGE_CLASS APPLICATION DISTRIBUTION
```

This command creates a new external message class DISTRIBUTION with the same attributes as external message class APPLICATION.

COPY MAILBOX_SET

Overview

Copies the attributes of an existing mailbox set to a new mailbox set.

Format

COPY MAILBOX_SET set_name1 set_name2

Parameters

set_name1
Name of the mailbox set to be copied.

set_name2
Name of the mailbox set to be created.

Description

The COPY MAILBOX_SET command creates a new mailbox set in the profile with the same attributes as an existing mailbox set.

Example

```
SNS$EDIT> COPY MAILBOX_SET TO_OPERATOR TO_SUPPORT
```

This command creates a new mailbox set TO_SUPPORT with the same attributes as mailbox set TO_OPERATOR.

COPY NODE

Overview

Copies selected attributes of an existing node to a new node.

Format

COPY NODE node_name1 node_name2 [/qualifier...]

Parameters

node_name1
Name of the node entry to be copied. The node entry must be copied separately.
The cluster alias cannot be used.

node_name2
Name of the node entry to be created.

Qualifiers

/PROCESS, /NOPROCESS (D)
Enables and disables copying of the node's PROCESS objects. The default is
/NOPROCESS.

/BATCHJOB, /NOBATCHJOB (D)
Enables and disables copying of the node's BATCHJOB objects. The default is
/NOBATCHJOB.

/FREE_BLOCKS, /NOFREE_BLOCKS (D)
Enables and disables copying of the node's FREE_BLOCKS objects. The default is
/NOFREE_BLOCKS.

/LOGINS, /NOLOGINS (D)
Enables and disables copying of the node's login limit object. The default is
/NOLOGINS.

/PRINTER_QUEUE, /NOPRINTER_QUEUE (D)
Enables and disables copying of the node's PRINTER_QUEUE objects. The
default is /NOPRINTER_QUEUE.

/SHADOW_SET, /NOSHADOW_SET (D)
Enables and disables copying of the node's SHADOW_SET objects. The default is /NOSHADOW_SET.

/EXCLUSION, /NOEXCLUSION (D)
Enables and disables copying of the node's lists of exclusions. The default is /NOEXCLUSION.

/ALL
Enables copying of all of the above object and exclusion information.

Description

The COPY NODE command creates a new node entry in the profile from an existing node entry. You must select the attributes you want for the new entry.

Example

```
SNS$EDIT> COPY NODE NODEA NODEB
```

This command creates a new entry for NODEB with the same attributes as the entry for NODEA.

DELETE

Overview

Deletes an entry from the profile.

Format

DELETE entry

Entries

- ACTION_ROUTINE_SET
- CLASS
- DECtalk_SET
- EXTERNAL_MESSAGE_CLASS
- MAILBOX_SET
- NODE
- NODE node_object

Description

The DELETE command removes the specified entry from the profile.

Related Commands

- ADD
- COPY
- MODIFY
- SHOW

Examples

Examples are provided for each option.

DELETE ACTION_ROUTINE_SET

Overview

Deletes an action routine set from the profile.

Format

DELETE ACTION_ROUTINE_SET set_name

Parameters

set_name
Name of the action routine set to be deleted.

Description

The DELETE ACTION_ROUTINE_SET command deletes the specified action routine set from the profile.

Example

```
SNS$EDIT> DELETE ACTION_ROUTINE_SET PURGE_DISK4
```

This command deletes action routine set PURGE_DISK4 from the profile.

DELETE CLASS

Overview

Deletes an event class from the profile.

Format

DELETE CLASS class_name

Parameters

class_name
Name of the event class to be deleted.

Description

The DELETE CLASS command deletes the specified event class from the profile.

Example

```
SNS$EDIT> DELETE CLASS LOW_PRIORITY
```

This command deletes event class LOW_PRIORITY from the profile.

DELETE DECtalk_SET

Overview

Deletes a DECtalk set from the profile.

Format

DELETE DECtalk_SET set_name

Parameters

set_name
Name of the DECtalk set to be deleted.

Description

The DELETE DECtalk_SET command deletes the specified DECtalk set from the profile.

Example

```
SNS$EDIT>DELETE DECtalk_SET CALL_MANAGER
```

This command deletes DECtalk set CALL_Manager from the profile.

DELETE EXTERNAL_MESSAGE_CLASS

Overview

Deletes an external message class from the profile.

Format

DELETE EXTERNAL_MESSAGE_CLASS ext_class_name

Parameters

ext_class_name
Name of the external message class to be deleted.

Description

The DELETE EXTERNAL_MESSAGE_CLASS command deletes the specified external message class or match string from the profile.

Example

```
SNS$EDIT> DELETE EXTERNAL_MESSAGE_CLASS DISTRIBUTION
```

This command deletes external message class DISTRIBUTION from the profile.

DELETE MAILBOX_SET

Overview

Deletes a mailbox set from the profile.

Format

DELETE MAILBOX_SET set_name

Parameters

set_name
Name of the mailbox set to be deleted.

Description

The DELETE MAILBOX_SET command deletes the specified mailbox set from the profile.

Example

```
SNS$EDIT>DELETE MAILBOX_SET TO_MANAGER
```

This command deletes mailbox set TO_MANAGER from the profile.

DELETE NODE

Overview

Deletes a node from the profile.

Format

DELETE NODE node_name [/qualifier]

Parameters

node_name
Name of the node entry to be deleted. Each node entry must be deleted separately. The cluster alias cannot be used.

Qualifiers

/ALL
If any node object information exists for the node, the /ALL qualifier prevents testing of the information and terminating the command with an error message. Any node object information that applies to the node is also deleted.

Description

The DELETE NODE command deletes the specified node from the profile.

Example

```
SNS$EDIT> DELETE NODE NODEX /ALL
```

This command deletes node NODEX and all related node object information from the profile.

DELETE NODE node_object

Overview

Deletes a node-related object from the profile.

Format

DELETE NODE node_name node_object name2 [name3 [name4]]

Parameters

node_name
Name of the node from which the node object is being deleted. Each node object must be deleted separately from each node. The cluster alias cannot be used.

node_object
Each node object must be deleted separately. Valid node objects are BATCHJOB, FREE_BLOCKS, LOGINS, PRINTER_QUEUE, PROCESS, SHADOW_SET, and EXCLUSION.

name2
Name of the node object being deleted from coverage. Each name must be deleted separately from each node object. Parameters name3 and name4 have different uses for each node object (see the following description).

Description

The DELETE NODE node_object command deletes the specified node object from the specified node. Each node object must be deleted separately from each node. Valid node objects are:

■ BATCHJOB

   name2 is the batch job name.

   name3 is the user name.

   name4 is the batch queue name.

■ FREE_BLOCKS

   name2 is the disk name.

- LOGINS

- PRINTER_QUEUE

  name2 is the printer queue name.

- PROCESS

  name2 is the process name.

  name3 is the UIC. The UIC has the syntax of [m,n], [group,name], or [name] where m,n is the numeric group and user codes, group is the group name, andname is the user name. The UIC must be enclosed in brackets ([ ]) as shown. The [m,n] or [group,name] syntax must be in quotes because of the comma. The default UIC is [1,4].

- SHADOW_SET

  name2 is the shadow set name.

- EXCLUSION

  name2 is the event code.

  name3 is the exclusion text.

Example

```
SNS$EDIT> DELETE NODE NODEX SHADOW_SET DSB111
```

This command deletes coverage for shadow set DSB111 from the NODEX profile.

EXIT

Overview

Verifies and closes the profile, then terminates the profile editor program.

Format

EXIT

Description

The EXIT command verifies the profile contents and updates the profile, then terminates the editing session and returns to the DCL prompt.

Example

```
SNS$EDIT>EXIT
$
```

This command updates the profile and leaves the editing session.

HELP

Overview

Provides online information about the profile editor commands.

Format

HELP [command [option [option]]]

Parameters

command
The command for which you are requesting help.

option
Any parameter, option, or qualifier invoked by the command.

Description

The HELP command implements the standard OpenVMS Help protocol to provide online information about the profile editor commands during a profile editing session.

Examples

```
SNS$EDIT>HELP
```

This command invokes Help at the top menu.

```
SNS$EDIT>HELP ADD
```

This command invokes Help on the ADD command.

```
SNS$EDIT>HELP ADD CLASS
```

This command invokes Help on the ADD CLASS command.

MODIFY

Overview

Modifies the attributes of an existing entry in the profile.

Format

MODIFY entry

Entries

- ACTION_ROUTINE_SET
- CLASS
- DECtalk_SET
- EXTERNAL_MESSAGE_CLASS
- MAILBOX_SET
- NODE
- NODE node_object

Description

The MODIFY command modifies the existing attributes of the specified entry in the profile.

Related Commands

- ADD
- COPY
- DELETE
- SHOW

Examples

Examples are provided for each option.

MODIFY ACTION_ROUTINE_SET

Overview

Modifies the attributes of an action routine set.

Format

MODIFY ACTION_ROUTINE_SET set_name /qualifier…

Parameters

set_name
Name of the action routine set to be modified.

Qualifiers

/MODE=SPAWN | BATCH
BATCH submits a command procedure to a batch queue. SPAWN executes a DCL command by a spawned subprocess.

/PROCEDURE=proc_name
Name of the command procedure to be submitted as a batch job. The full path name with file extension must be specified. Only applies, and is required, when /MODE=BATCH. See the "User Programming" chapter for more information on command procedures.

/USERNAME=username
User name under which the Watchdog Manager submits the action routine as a batch job. Applies only when /MODE=BATCH.

/QUEUE=queue_name
Name of the batch queue to which the procedure is to be submitted. Applies only when /MODE=BATCH.

/COMMAND=command
The DCL command string to be executed by the spawned subprocess. Only applies, and is required, when /MODE=SPAWN. See the "User Programming" chapter for more information.

/OUTPUT=filename
Specifies an output file to write the information written to SYS$OUTPUT by the spawned DCL command. Only applies when /MODE=SPAWN.

/LOG_FILE, /NOLOG_FILE
Enables and disables writing to a batch or spawn mode output file.

Description

The MODIFY ACTION_ROUTINE_SET command modifies the attributes of an existing action routine set entry in the profile.

Example

```
SNS$EDIT> MODIFY ACTION_ROUTINE_SET PURGE_DISK3
          /MODE=BATCH /PROCEDURE=$DISK1:[S4T]GO_BAT.COM
```

This command changes action routine set PURGE_DISK3 to execute the command procedure GO_BAT in batch mode.

MODIFY CLASS

Overview

Modifies the attributes of an event class.

Format

MODIFY CLASS class_name /qualifier...

Parameters

class_name
Name of the event class to be modified.

Qualifiers

/EVENT=(event_code,...) or /EVENT=ALL
Specifies the event codes to be added. Can also specify event codes for which the attributes are to be added or updated. The "Event Descriptions" chapter provides a list of the event codes and their meanings.

The following qualifiers set the priority level and notification options for the specified event codes and must be used with the /EVENT qualifier:

/PRIORITY=level
Valid priority levels are HIGH, LOW, NOT_CHECKED, and NOT_DISPLAYED.

/ACTION_ROUTINE_SET=set_name, /NOACTION_ROUTINE_SET
Name of the action routine set to be added.

/DECtalk_SET=set_name, /NODECtalk_SET
Name of the DECtalk routine set to be added.

/MAILBOX_SET=set_name, /NOMAILBOX_SET
Name of the mailbox set to be added.

/SEVERITY=level
Valid mailbox set severity levels are INFORMATION, SUCCESS, ERROR, WARNING, or FATAL.

Description

The MODIFY CLASS command modifies the attributes of an existing event class entry in the profile.

Example

```
SNS$EDIT> MODIFY CLASS CRITICAL /EVENT=DQP /PRIORITY=HIGH
```

This command modifies the event class CRITICAL so the Disk Queue Problems (DQP) event has HIGH priority.

MODIFY DECtalk_SET

Overview

Modifies the attributes of a DECtalk set.

Format

MODIFY DECtalk_SET set_name /qualifier...

Parameters

set_name
Name of the DECtalk set to be modified.

Qualifiers

/SCHEDULE=string /DAY=(day,...)
The /DAY qualifier is required.

The /SCHEDULE qualifier provides a 24-character string that represents each hour of a 24-hour day. Each character of the string specifies one of the following:

- 0 — Inhibit DECtalk during that hour.
- 1 — Use /OPERATOR=1 phone number and delay time during that hour.
- 2 — Use /OPERATOR=2 phone number and delay time during that hour.

If less than 24 characters are given, the rest of the string is filled with zeros.

The /DAY qualifier specifies the days of the week for which the /SCHEDULE string is in effect. Valid day values are SUNDAY, MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, and SATURDAY, plus the following:

- WEEKDAYS — Specifies MONDAY through FRIDAY.
- WEEKENDS — Specifies SATURDAY and SUNDAY.
- EVERYDAY — Specifies all seven days of the week.

You can also specify part of a week, for example:

```
/DAY=(WEEKDAYS,NOMONDAY,NOTUESDAY)
```

/PHONE_NUMBER=string /OPERATOR=oper /DAY=(day,...)
The /OPERATOR and /DAY qualifiers are required.

The /PHONE_NUMBER qualifier specifies the phone number for the specified operator on specified days. The maximum length is 20 characters. If the DECtalk device supports an internal speaker, a blank string causes the DECtalk device to speak the messages rather than dialing the telephone number.

Valid /OPERATOR values are 1 or 2 for the existing /SCHEDULE string.

Valid /DAY values are the same as for the /SCHEDULE qualifier.

You can use the ampersand (&) as the twentieth character in the Operator 1 phone number string as a continuation character to enable the following:

■   For Operator 1 hours, the Watchdog Manager uses the delay time specified for Operator 1, then initiates a DECtalk call using the number specified for Operator 1, concatenated with the number specified for Operator 2.

■   For Operator 2 hours, the Watchdog Manager uses the delay time specified for Operator 2, then initiates the DECtalk device to use an internal speaker without calling the number.

/DELAY=hh:mm:ss /OPERATOR=oper /DAY=(day,...)
The /OPERATOR and /DAY qualifiers are required.

The /DELAY qualifier specifies the time in hours and minutes that the Watchdog Manager waits before initiating a DECtalk call after an event message is added or updated.

Valid /OPERATOR values are 1 or 2 for the existing /SCHEDULE string.

Valid /DAY values are the same as for the /SCHEDULE qualifier.

/LINE=port
Specifies the physical line, such as TXA0: or LTA100:, that is connected to the DECtalk unit.

/TYPE=DTC01 | DTC03
Specifies the connected DECtalk unit type.

/SPEECH_SPEED=number
Specifies the speech speed in words per minute. The range is 120 to 350.

/VOICE=voice_type
Valid voice types are FEMALE, CHILD, DEEP_MALE, DEEP_FEMALE, OLDER_MALE, LIGHT_FEMALE, ALL_VOICES, or MALE.

/DIALING_TYPE=TONE | PULSE
Specifies the dialing type.

/REPEAT_COUNT=number
Specifies the number of times the list of event messages is repeated when the call is answered. The range is 0 to 999.

/MESSAGE_TYPE=FULL | BRIEF
FULL specifies that the full event message text is to be sent. BRIEF specifies a simplified message is to be sent, for example, "Node has a disk near full."

/KEYSTROKE_TRIALS=number
Specifies the number of times the Watchdog Manager repeats the prompt "Hello, this is DECtalk ... Dial any number to get my message." The user must dial a digit to receive the welcome message before the number of trials expires. A value of zero (/KEYSTROKE_TRIALS=0) inhibits the DECtalk prompt message and the first message is the welcome text. The range is 0 to 999.

/WELCOME_TEXT="message text"
Message introducing the list of event messages when the call is answered. This message is spoken after the DECtalk prompt message.

Description

The MODIFY DECtalk_SET command modifies the attributes of an existing DECtalk set entry in the profile. The command provides an additional set of attributes for customizing an existing DECtalk set.

Example

```
SNS$EDIT> MODIFY DECtalk_SET CALL_OPERATOR /DAY=WEEKDAYS
          /OPERATOR=1 /PHONE_NUMBER=15556789
```

This command sets the attributes for the CALL_OPERATOR DECtalk set.

MODIFY EXTERNAL_MESSAGE_CLASS

Overview

Modifies the attributes of an external message class or inserts or modifies a match string.

Format

MODIFY EXTERNAL_MESSAGE_CLASS ext_class_name /qualifier...

Parameters

ext_class_name
Name of the external message class to be modified.

Qualifiers

/TEXT="message text"
External message match string to be inserted or modified.

/POSITION=number
Specifies a position in the numeric range of 1 to 64 in which to insert, modify, or delete the match string.

/DELETE
Deletes the match string at the position specified by the /POSITION qualifier. Match strings at the higher positions are each moved to the next lower position.

/INSERT
Specifies insertion of the match string at the position specified by the /POSITION qualifier. If you insert a message when 64 messages are already defined, the new message replaces the message in position 64.

If the /DELETE or /INSERT qualifier is not given, the default replaces the match string at the position specified by the /POSITION qualifier.

The following qualifiers set the priority level and notification options for the external message:

/PRIORITY=level
Valid priority levels are HIGH, LOW, NOT_CHECKED, and NOT_DISPLAYED.

/ACTION_ROUTINE_SET=set_name, /NOACTION_ROUTINE_SET
Name of the action routine set to be added.

/DECtalk_SET=set_name, /NODECtalk_SET
Name of the DECtalk set to be added.

/MAILBOX_SET=set_name, /NOMAILBOX_SET
Name of the mailbox set to be added.

/SEVERITY=level
Valid mailbox set severity levels are INFORMATION, SUCCESS, ERROR, WARNING, or FATAL.

Description

The MODIFY EXTERNAL_MESSAGE_CLASS command modifies the attributes of an existing external message class entry in the profile, or inserts or modifies a match string.

Example

```
SNS$EDIT>MODIFY EXTERNAL_MESSAGE_CLASS TIMEOUTS /POSITION=3
        /TEXT="CLOCK-*"
```

This command modifies the attributes for the TIMEOUTS external message class by replacing the third match string with the text "CLOCK-*".

MODIFY MAILBOX_SET

Overview

Modifies the attributes of a mailbox set.

Format

MODIFY MAILBOX_SET set_name /qualifier

Parameters

set_name
Name of the mailbox set to be changed.

Qualifiers

/MAILBOX=name
Physical or logical name of the OpenVMS mailbox to which event messages are to be sent. This qualifier is required.

Description

The MODIFY MAILBOX_SET command modifies the physical or logical name of the OpenVMS mailbox to receive event messages.

Note: The mailbox reader program must create the OpenVMS mailbox and wait for event messages to be sent.

Example

```
SNS$EDIT> MODIFY MAILBOX_SET /MAILBOX=SYS_MNGR:
```

This command sets the OpenVMS mailbox logical name to SYS_MNGR:.

MODIFY NODE

Overview

Modifies the attributes of a node entry.

Format

MODIFY NODE node_name /qualifier...

Parameters

node_name
Name of the node entry to be modified. Each node must be modified separately.
The cluster alias cannot be used.

Qualifiers

/CLASS=class_name
Specifies the new event class under which the node is to be monitored.

/EXTERNAL_MESSAGE_CLASS=ext_class_name
New name of the class to be used for external messages.

/TIME_DIFFERENCE=time
New time difference between the polled node and the node running the
Watchdog Manager. Time can be expressed as plus or minus, up to 12:00:00.

/DFS=(event_code,...), /NODFS=event_code
Enable or disable DFS disks covered by the specified event code. Valid event
codes are SWL (software write locked) and DSS (disk state problem).

/TRANSPORT=TCPIP | DECnet
Specifies the network transport for the Watchdog Manager to access the
Watchdog Agent running on the polled node.

Description

The MODIFY NODE command modifies the polling attributes for an existing node in the profile. If a qualifier is not given, the value is not changed.

Example

```
SNS$EDIT> MODIFY NODE NODEX /CLASS=LOW_PRIORITY
```

This command sets node NODEX for LOW_PRIORITY event class.

MODIFY NODE node_object

Overview

Modifies the attributes of a node object entry.

Format

MODIFY NODE node_name node_object [name2 [name3 [name4]]] /qualifier...

Parameters

node_name
Name of the node for which the node object is being modified. Each node object must be modified separately for each node. The cluster alias cannot be used.

node_object
Each node object must be changed separately. Valid node objects are BATCHJOB, FREE_BLOCKS, LOGINS, PRINTER_QUEUE, PROCESS, SHADOW_SET, and EXCLUSION.

name2
Name of the node object being changed for coverage. Each name must be changed separately for each node object, except for LOGINS, which can only be set once for the node. Parameters name3 and name4 have different uses for each node object (see the following description).

Qualifiers

/INTERVAL=hh:mm:ss
Sets the polling interval for the specified node object. Applies to all node objects except EXCLUSION.

The polling interval for the node object does not cause polling to occur more frequently than normal Watchdog Manager polling of the Watchdog Agent nodes. For example, a value less than the Watchdog Manager polling interval, or a value of 0, causes the node object to be polled at every Watchdog Manager poll. A value 3 times longer than the Watchdog Manager polling interval causes the node object to be polled on every third Watchdog Manager poll.

Description

The MODIFY NODE node_object command modifies the attributes of an existing node object in the profile. Each node object must be changed separately for each node. Valid node objects are:

- BATCHJOB

  name2 is the batch job name.

  name3 is the user name.

  name4 is the batch queue name.

  Wildcards can be included in the parameter names.

- FREE_BLOCKS

  name2 is the disk name.

  Additional qualifiers:

  /PERCENT=percent or /BLOCKS=number

- LOGINS

  Additional qualifiers:

  /LIMIT=n where n is the login limit comparison value.

- PRINTER_QUEUE

  name2 is the printer queue name (the default is SYS$PRINT).

- PROCESS

  name2 is the process name.

  name3 is the UIC. The UIC has the syntax of [m,n], [group,name], or [name] where m,n is the numeric group and user codes, group is the group name, and name is the user name. The UIC must be enclosed in brackets ([ ]) as shown. The [m,n] or [group,name] syntax must be in quotes because of the comma. The default UIC is [1,4].

  Wildcards can be included in the name2 and name3 parameters. Correct syntactical forms for wildcarded UICs are [*], [*,n], [m,*], [*,name], [group,*] where m,n is the numeric group and user codes, group is the group name, and name is the user name.

- SHADOW_SET

  name2 is the shadow set name.

  Additional qualifiers:

  /FULL_COPY (D) | /NOFULL_COPY

  /MERGE_COPY | /NOMERGE_COPY (D)

  /MEMBERS=number (default is 2)

  For explanations of these qualifiers, see the Shadow Set Problem event description in the "Event Descriptions" chapter.

- EXCLUSION

  name2 is the event code.

  name3 is the currently excluded item. See the "Event Descriptions" chapter for events supporting exclusions.

  Required additional qualifier:

  /NEW_TEXT=item

  Excluded item replacing the item specified in name3.

Example

```
SNS$EDIT> MODIFY NODE NODEX EXCLUSION SWL DAD7 /NEW_TEXT=DAD*)
```

This command modifies the software write-lock event on node NODEX so that all DAD disks are excluded, where only DAD7 had been excluded.

QUIT

Overview

Terminates the profile editing session without verifying or updating the profile.

Format

QUIT

Description

The QUIT command terminates the profile editing session without verifying or updating the profile. It returns to the command prompt from which you entered the profile editor.

Example

```
SNS$EDIT>QUIT
SNS>
```

This command shows a return to the Watchdog Manager controller prompt.

SET

Overview

Sets Watchdog Manager or display parameters in the profile.

Format

SET option

Options

- CONSOLIDATOR
- DISPLAY

Description

The SET command sets parameters in the profile for the Watchdog Manager or display process.

Related Commands

SHOW

Examples

Examples are provided for each option.

SET CONSOLIDATOR

Overview

Sets Watchdog Manager process-related parameters.

Format

SET CONSOLIDATOR /qualifier...

Qualifiers

/POLLING_INTERVAL=seconds
Specifies the number of seconds to wait after the end of one polling sequence before beginning the next polling sequence.

/ENABLE=(option,...), /DISABLE=(option,...)
Enables and disables notification options. Valid options are DECtalk, MAILBOX, and ACTION_ROUTINE.

Description

The SET CONSOLIDATOR command sets the polling interval and notification options in the profile which can be overridden by controller commands issued at the SNS$EDIT> prompt.

Example

```
SNS$EDIT> SET CONSOLIDATOR /POLLING_INTERVAL=300 /ENABLE=(MAILBOX,DECtalk)
```

This command sets the polling interval for five minutes and enables the process for sending OpenVMS mailbox and DECtalk messages.

SET DISPLAY

Overview

Sets display-related parameters.

Format

SET DISPLAY /qualifier...

Qualifiers

/PRIORITY=HIGH | LOW | BOTH (D)
Selects the display of high or low priority messages, or messages of both priorities. The default is BOTH.

/HIGHLIGHT_TIME=hh:mm:ss
Sets the highlight time for new or updated continuous display messages.

/ENABLE=SCROLLING, /DISABLE=SCROLLING
Enables or disables scrolling for continuous display messages.

Description

The SET DISPLAY command sets display parameters in the profile, which can be overridden by qualifiers, used with the SHOW EVENTS and SHOW EVENTS/CONTINUOUS commands.

Example

```
SNS$EDIT>SET DISPLAY /ENABLE=SCROLLING
```

This command enables event message scrolling in the continuous event display process.

SHOW

Overview

Lists the current contents of the profile.

Format

SHOW entry [/qualifier...]

Entries

ALL
Lists all information contained in the profile. The default is ALL.

CLASS class_name
Lists information for the specified event class.

CONSOLIDATOR
Lists Watchdog Manager process-related parameters.

DISPLAY
Lists display-related parameters.

NODE node_name
Lists information for the specified node.

ACTION_ROUTINE_SET set_name
Lists information for the specified action routine set.

DECtalk_SET set_name
Lists information for the specified DECtalk set.

EXTERNAL_MESSAGE_CLASS ext_class_name
Lists information for the specified external message class.

MAILBOX_SET set_name
Lists information for the specified mailbox set.

All names, such as node_name, set_name, or class_name, can be specified with a wildcard (*).

Qualifiers

/ALL
Valid only for the SHOW NODE command. Lists all node parameters, node objects, and exclusion information for the specified node.

/OUTPUT=filename
Specifies an OpenVMS file to write the SHOW command information to. The default is SYS$OUTPUT.

/FORMAT=COMMANDS | LIST (D)
Specifies the output format. /FORMAT=LIST produces a list (text)output. The default is /FORMAT=LIST.

/FORMAT=COMMANDS produces a command file that can be used to:

- Determine which commands can be included to add an entry, if an example already exists in the profile

- Create a new profile from a source profile by editing the command file, then executing the file with the @ command

/BATCHJOB, /NOBATCHJOB (D)
Enables or disables the list of the node's BATCHJOB objects. The default is /NOBATCHJOB.

/EXCLUSION, /NOEXCLUSION (D)
Enables or disables the list of the node's exclusion lists. The default is /NOEXCLUSIONS.

/FREE_BLOCKS, /NOFREE_BLOCKS (D)
Enables or disables the list of the node's FREE_BLOCKS objects. The default is /NOFREE_BLOCKS.

/LOGINS, /NOLOGINS (D)
Enables or disables the list of the node's login limit object. The default is /NOLOGINS.

/PRINTER_QUEUE, /NOPRINTER_QUEUE (D)
Enables or disables the list of the node's PRINTER_QUEUE objects. The default is /NOPRINTER_QUEUE.

/PROCESS, /NOPROCESS (D)
Enables or disables the list of the node's PROCESS objects. The default is /NOPROCESS.

/SHADOW_SET, /NOSHADOW_SET (D)
Enables or disables the list of the node's SHADOW_SET objects. The default is
/NOSHADOW_SET.

Description

The SHOW command generates a list of the current profile contents.

Related Commands

SET

Example

```
SNS$EDIT> SHOW ALL /OUTPUT=WORLD.TXT
```

This command generates a list of profile contents and stores it in the file
WORLD.TXT in your default directory.

SPAWN

Overview

Spawns a subprocess from the current profile editing session.

Format

SPAWN [command]

Parameters

command
DCL command string to be executed in the subprocess.

Description

The SPAWN command creates a subprocess that suspends but does not terminate the current profile editing session. If a DCL command string is given, SPAWN returns to the SNS$EDIT> prompt and deletes the subprocess when it completes. If a DCL command string is not given, the subprocess accepts DCL commands at the $ prompt until you enter the LOGOUT command, which terminates the subprocess and returns to the SNS$EDIT> prompt.

Examples

```
SNS$EDIT> SPAWN COPY FILE1. FILE2.
SNS$EDIT>
```

This command copies the contents of FILE1. to FILE2. in the default directory and returns to the profile editor prompt.

```
SNS$EDIT>SPAWN
$
$
$ LOGOUT
SNS$EDIT>
```

This command enters a spawned process that processes DCL commands until you enter the LOGOUT command.

6 Profile Editor Windows

Overview

This chapter provides guidelines for invoking the Watchdog Manager profile editor windows facility on a DECwindows Motif graphics display and selecting commands from the pull-down menus.

You can invoke the Watchdog Manager Profile Editor window from either the DCL prompt or Watchdog Manager controller prompt:

```
$ SENSE WATCHDOGS EDIT PROFILE /INTERFACE=DECwindows

$ SENSE WATCHDOGS
SNS> EDIT PROFILE /INTERFACE=DECwindows
```

The "Profile Management" chapter provides guidelines for collecting the information you need for creating or updating a profile. The tasks for editing a profile are the same whether you use the profile editor keyboard commands or the profile editor windows under the DECwindows Motif graphics display.

Watchdog Manager Profile Editor Window

The Profile Editor main window provides the File, Commands, and Help menus in the dialog bar.

The following shows the pull-down menus that are active when you invoke the profile editor windows facility on a DECwindows Motif display.

Watchdog Manager Profile Editor Main Window
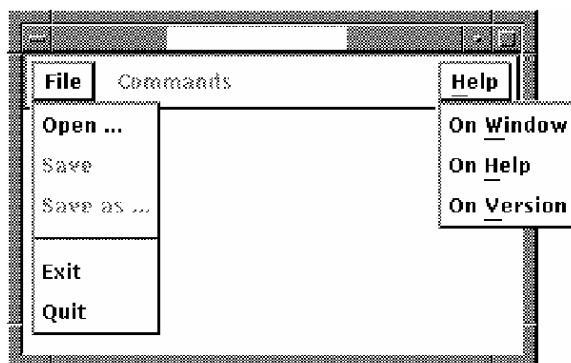
The File and Help menus are active when you invoke the profile editor windows facility. The Commands menu is activated when you open a profile.

Mouse button one (MB1) on your pointing device selects the menus and menu items in profile editor windows. To select a menu item, you can pull down the menu with MB1 and release on the item, or you can click on the menu, then click on the item.

The Profile Editor menus do the following:

File menu	Opens and saves profiles.
Commands menu	Selects the command menus and opens the window for the entry.
Help menu	Displays online Help about profile editor windows and topics:
	On Window: Displays information about the Watchdog Manager profile editor windows and commands.
	On Help: Displays information about the DECwindows Motif Help system.
	On Version: Displays information about the Watchdog Manager product version and trademarks.

If you do not open a profile, you can select Exit or Quit to leave the session.

Opening a Profile

To open a profile, first select Open... from the File menu. This opens the Select Profile window as shown in the following figure.

Select Profile Window
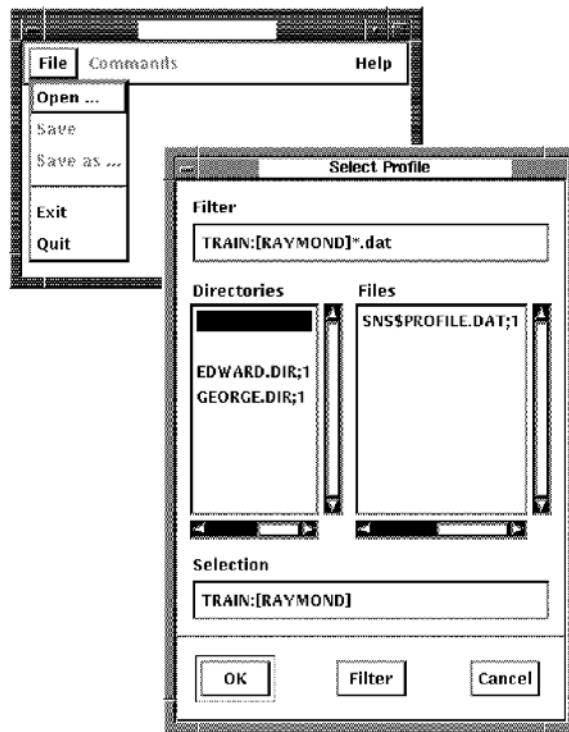
The Select Profile window uses your main directory as the default for opening a profile or you can click on a subdirectory in the Directories list box. You can then use any of the following methods to open a profile:

- Double-click on an existing profile in the Files list box

- Click on an existing profile in the Files list box, then press Return or click on OK

- Click on the Selection box, enter the name of a new or existing profile from the keyboard with the .DAT file extension, then press Return or click on OK

The default profile name is SNS$PROFILE.DAT.

The Filter button enables you to select a subdirectory, display a single profile, or to display a set of profiles using the wildcard (* or %) characters. You can click on the Files or Selection box, edit the file specification, then click on Filter. The list of profiles then appears in the Files list box.

Pull-Down Menus for an Open Profile

The following figure shows the Profile Editor pull-down menus that are active when you open a profile for an editing session.

Pull-Down Menus for an Open Profile
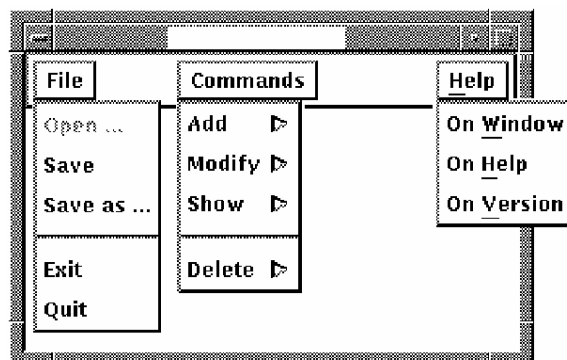
If you open a profile and do not make changes, you can select Exit or Quit to leave the session without saving an updated version of the same profile.

If you make changes, you can select Exit to save the updated profile and leave the session. If you select Quit, an information box tells you that the profile has not been saved and asks if you want to save it before quitting:

■ Click on YES to leave the session without saving the profile.

■ Click on NO to return to the Profile Editor window. You can then do more editing or save the profile.

You can select Save or Save as... to save a profile. Save saves the profile with the current values and the session remains open so you can create another profile. You can edit the values for an existing profile, then use Save as... to store the profile under another file name.

Command Pull-Down Menus

The Commands menu is activated when you open a profile. The Commands menu provides the Add, Modify, Show, and Delete pull-down menus as shown in the following figure.

Command Pull-Down Menus
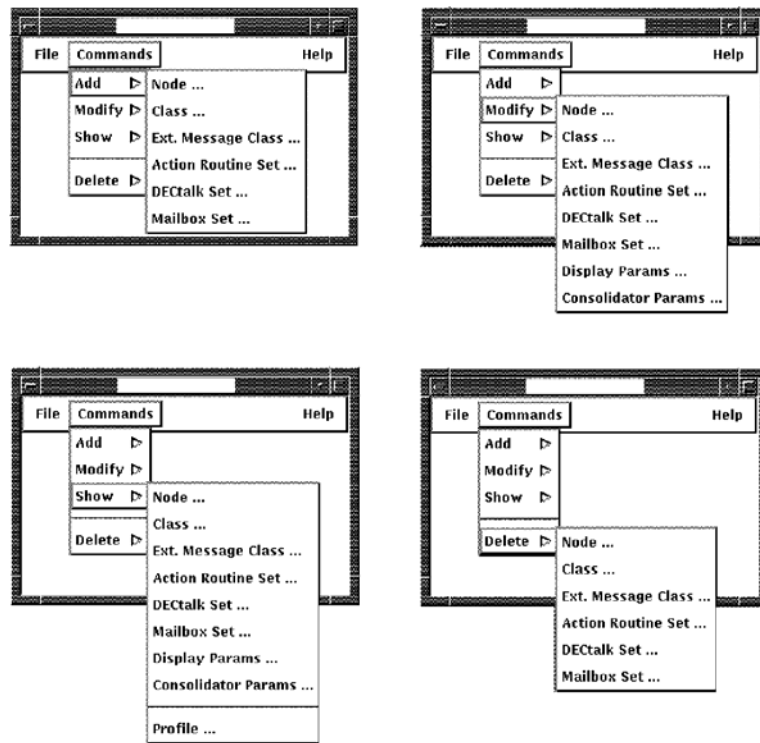
The Add, Modify, Show, and Delete menus each provide the following entries:

- Node...

- Class...

- External Message Class...

- Action Routine Set...

- DECtalk Set...

- Mailbox Set...

The Modify menu also provides these options:

- Display Parameters...

- Watchdog Manager Parameters...

The Show menu also provides these options:

- Display Parameters...

- Watchdog Manager Parameters...

- Profile...

Command Select Windows

The Add command opens a separate window for each entry to be added to the profile. For example, you can open the Add Mailbox Set window and add a mailbox set as described in Adding a Mailbox Set.

The Modify, Show, and Delete commands each open a Select window first.

The Select Node Window for the Modify Node Command figure shows the Select Node window for the Modify Node command as an example.

You can use one of the following methods to select an entry in a Select window:

- Double-click on an existing entry in the Items list box.

- Click on an entry in the Items list box, then press Return, click on OK, or click on Apply.

- Click on the Selection box and enter the entry name from the keyboard, then press Return, click on OK, or click on Apply.

- Click on Cancel to dismiss the window after clicking on Apply or to dismiss the window without selecting an entry.

The Modify and Show command windows are identical to the Add command windows and display the current settings for the entry. However, the Modify command windows enable you to make changes to the entry.

The Delete command deletes an entry and does not open a command window.

Select Node Window for the Modify Node Command
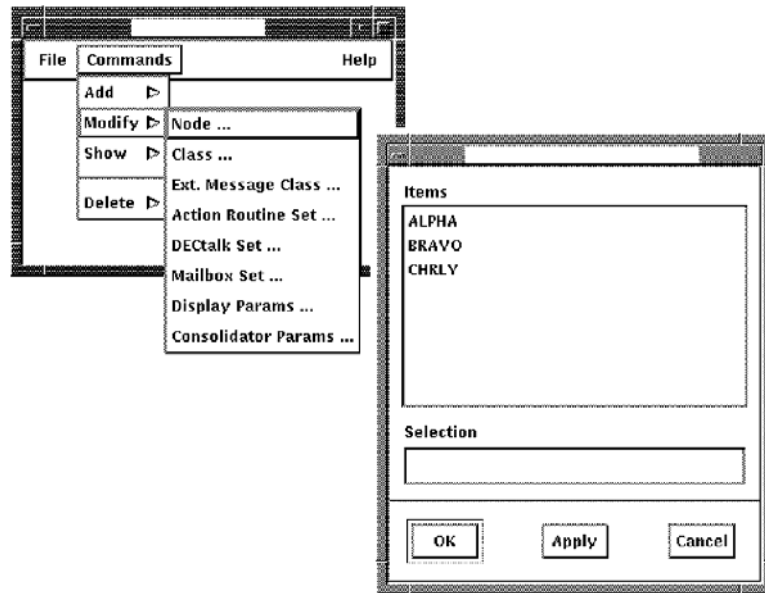
Adding Entries to a Profile

This section describes how to use the profile editor windows facility to simplify your profile editing tasks.

The tasks for creating a profile are as follows:

1. Invoke the profile editor windows facility.

2. Add any mailbox sets.

3. Add any action routine sets.

4. Add any DECtalk sets.

5. Add any event classes (other than DEFAULT), including any notification options.

6. Add any external message classes (other than DEFAULT), including any notification options.

7. Add the nodes to be polled, including any node objects.

8. Show the display parameters and modify if necessary.

9. Show the Watchdog Manager parameters and modify if necessary.

10. Show and verify the profile contents.

11. Save the profile.

The profile editor software verifies each entry and returns an error message if a required, previous entry is missing. For example, you must add a mailbox set to the profile before you can add the mailbox set name to an event class or external message class. You must also add any event class or external message class (other than DEFAULT) before you can add a node for that class.

The following sections provide examples of the steps that can be used to simplify your editing tasks. If you are a new user, you may want to refer to these examples as you gain experience.

Adding Entries of the Same Type

When creating a profile, it is necessary to add multiple entries of the same type. The following steps show how to add multiple entries, such as mailbox sets, to the profile:

1. In the Profile Editor main window, click on the File menu and select Open.

2. In the Select Profile window, select or enter the name of the profile to be edited.

3. In the Profile Editor main window, click on the Commands menu and select Add Mailbox Set.

4. In the Add Mailbox Set window, enter both the mailbox set name and OpenVMS mailbox name. Click on Apply to enter the mailbox set.

5. In the Add Mailbox Set window, change the mailbox set name and OpenVMS mailbox name as necessary. Click on Apply to enter the new mailbox set.

   Repeat this step to enter the remaining mailbox sets. On the last set, you can click on OK, or you can click on Apply, then Cancel.

6. In the Profile Editor main window, select the next set of entries to be added. For example, click on the Commands menu and select Add Action Routine Set.

Adding Multiple Node Entries

Node entries can be added as described in the previous section with some additional features:

1. In the Profile Editor main window, click on the Commands menu and select Add Node.

2. In the Add Node window, enter the Node Name, Class, and External Message Class. Click on any option buttons that apply, then click on Apply to enter the node.

3. In the Add Node window, change the Node Name and any option settings, then click on Apply to enter the node.

4. Repeat the preceding step to enter the remaining nodes.

A node must be defined in the profile before you can add node objects or exclusions. While executing the preceding steps, you can define a node, then add the node objects and exclusions as follows:

5. In the Add Node window, enter the Node Name, Class, and External Message Class. Click on any option buttons that apply, then click on Apply to enter the node.

6. In the Profile Editor main window, click on the Commands menu and select Modify Node. Notice that the window function changes from Add to Modify. (The Select Node window also appears.)

7. In the Modify Node window, click on a node object button or exclusion entries button. For example:

    a. In the Modify Node window, click on the Missing Batchjobs button.

    b. In the Missing Batchjobs window, add the first missing batchjob to be covered, then click on Apply.

        Add each missing batchjob to be covered. Change the Missing Batchjob Name and any other information, then click on Apply.

        The node object and exclusion entries windows have Add, Modify, and Delete buttons so you can change the node object window mode, regardless of the command window mode (Add, Modify, or Show).

    c. In the Modify Node window, click on the next node object to be added. Add the node object items to be covered, then click on Apply.

Use these steps to add the remaining node objects or exclusions. In the Modify Node window, click on Apply to enter the node entry with the node object or exclusion entries.

Copying Nodes with Node Objects

The Modify Node command can be used to copy an existing node, with its node objects or exclusions, to a new node entry as follows:

1. Add the node and any node objects or exclusions as described in the Adding Multiple Nodes section.

2. In the Profile Editor main window, click on the Commands menu and select Modify Node.

3. In the Select Node window, click on a node name in the Items list box, then click on Apply.

4. In the Modify Node window, click on the Commands menu and select Copy.

5. In the Copy Node window, enter the New Node Name. Click on the "Copy node itself" button, then click on the button for any node objects or exclusions to be copied.

   Click on OK to enter the new node and dismiss the Copy Node window. You can also click on Apply and create other node entries to be copied. You can use the current node in the Modify Node window or you can specify any node shown in the Select Node window in the Old Node Name box.

Function Buttons

The function buttons at the bottom of an Profile Editor window do the following:

OK	Completes the operation and dismisses the window.
Apply	Completes the operation without dismissing the window.
	In the Select window, you can select entries for another operation without dismissing either the command window or Select window.
	In the Profile Editor main window, you can change the command window function from the Commands menu without dismissing either the command window or Select window.
Cancel	Dismisses a Select window without affecting the command window.
	Dismisses a command or node object window without entering or saving changes. Any changes are lost unless you save them first with Apply.

Navigating Through a Command Window

You can use the following methods to navigate through a command window or node object window:

■   MB1 selects boxes, buttons, and other items in the window.

■   Tab and Shift/Tab scroll forward and backward through the window elements.

■   MB1 also selects buttons that change the window mode or select a window option. For example, you can set batch mode or spawn mode in an Add Action Routine Set window, or select Operator 0, 1, or 2 in an Add DECtalk Set window.
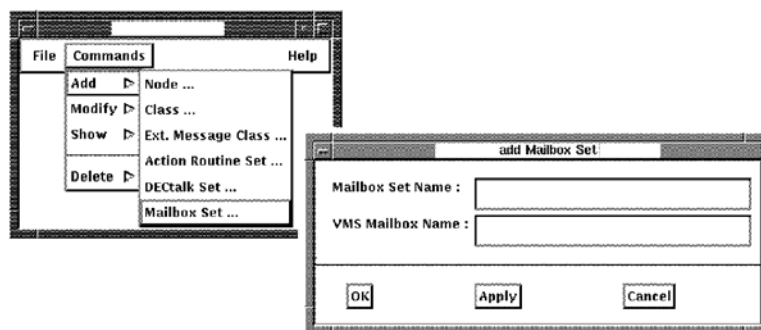
The right and left arrow keys or the up and down arrow keys step you through the button options. The Return key selects the option.

Adding a Mailbox Set

The following shows the Add Mailbox Set window. Select the window as follows:

1. Click on Commands

2. Click on Add

3. Click on Mailbox Set...

Add Mailbox Set Window

Click on the following boxes to enter the necessary values:

Mailbox Set Name:	Enter the name of the mailbox set.
OpenVMS Mailbox Name:	Enter the physical or logical name of the OpenVMS mailbox to which the event messages are to be sent.

Adding an Action Routine Set

The following shows the Add Action Routine Set window. Select the window as follows:

1.   Click on Commands

2.   Click on Add

3.   Click on Action Routine Set...

Click on the following boxes or items to enter or change the necessary values:

|	
Action Set Name:	Enter the name of the action routine set.
Logfile Switch:	Enables or disables batch mode writing to a log file. The default is enabled (On).
Mode:	Sets the mode to Batch or Spawn. The default is Batch.

To set the batch mode parameters:

User name:	User name under which the action routine is to be submitted as a batch job. The default is SYSTEM.
Procedure name:	Enter the name of the command procedure to be submitted as a batch job. The full path name with file extension is required.
Batch queue name:	Name of the batch queue to which the procedure is to be submitted. The default is SYS$BATCH.

To set the spawn mode parameters:

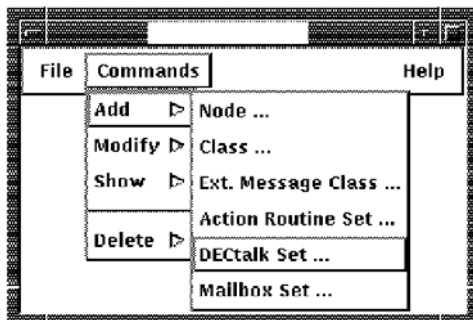|	
OpenVMS command:	Enter the DCL command string to be executed by the spawned subprocess.
Logfile name:	Output file for writing the information written to SYS$OUTPUT by the spawned DCL command. The default is SYS$MANAGER:SNS_EDITOR.LOG.

Add Action Routine Set Window
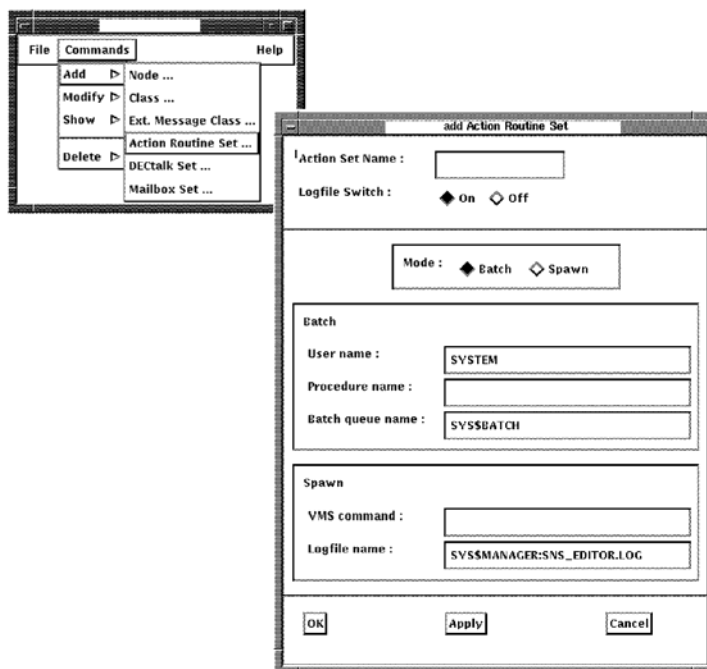
Adding a DECtalk Set

The following shows the Add DECtalk Set window. Select the window as follows:

1. Click on Commands

2. Click on Add

3. Click on DECtalk Set...

Click on the following boxes or items to enter or change the necessary values:

DECtalk Set name:	Name of the DECtalk set. The default name is DEFAULT.
Operator:	Each day of the week is represented by a row for Operator 1 and 2. The Watchdog Manager can specify either operator for each hour of a 24-hour day, and for each day of the week: 0 — Inhibit DECtalk during that hour. 1 — Use Operator 1 delay time and phone number during that hour. 2 — Use Operator 2 delay time and phone number during that hour. Operator buttons 1 and 2 set the operator. In a week row, click on the box for each hour of each day for which that operator applies. You can set the operator for successive days using Tab (forward) or Shift/Tab (reverse). Operator button 0 sets the value to 0. The default is 0.
Delay:	The time in hours and minutes that the Watchdog Manager waits before initiating a DECtalk call after an event message is added or updated.
Phone number:	The telephone number for the specified operator to use on the specified days. The maximum length is 20 characters. Click on a row under the Operator 1 or 2 Delay—Phone number boxes to enter the delay time and phone number for each operator. You can then: ■ Move the Delay sliders with MB1 to change the delay time in the selected operator Delay--Phone number box. The default is 30 minutes. ■ Click MB1 on the Phone number box to enter the telephone number for the operator. The number you enter from the keyboard appears in the selected Delay—Phone number box. You can use the ampersand (&) as the twentieth character in the Operator 1 phone number string as a continuation character to enable the following: ■ For Operator 1 hours, the Watchdog Manager uses the delay time specified for Operator 1, then initiates a DECtalk call using the number specified for Operator 1, concatenated with the number specified for Operator 2. ■ For Operator 2 hours, the Watchdog Manager uses the delay time specified for Operator 2, then initiates the DECtalk device to use an internal speaker without calling the number.
DECtalk line:	The physical line, such as TXA0: or LTA100:, that is connected to the DECtalk unit. This entry is required.

Message text:	The welcome message that introduces the list of event messages. The message is spoken after the DECtalk prompt message when the call is answered. The default is an empty string.
Speech speed:	The speech speed in words per minute. The range is 120 to 350. The default is 120.
Repeat count:	The number of times the list of event messages is repeated when the call is answered. The range is 0 to 999. The default is 3.
Keystroke trials:	The number of times the Watchdog Manager repeats the DECtalk prompt message "Hello, this is DECtalk ... Dial any number to get my message."
	The user must dial a digit to receive the welcome message before the number of trials expires. The range is 0 to 999. A value of 0 inhibits the DECtalk prompt message and the welcome text is the first message sent. The default is 0.
Dialing type:	The dialing type is TONE or PULSE. The default is PULSE.
Message type:	The type of message to be sent is FULL (full event message) or BRIEF (simplified message). The default is FULL.
Voice type:	Valid voice types are FEMALE, CHILD, DEEP_MALE, DEEP_FEMALE, OLDER_MALE, LIGHT_FEMALE, ALL_VOICES, and MALE. The default is CHILD.
DECtalk type:	The connected DECtalk unit type is DTC01 or DTC03. The default is DTC03.

Add DECtalk Set Window

Adding an Event Class

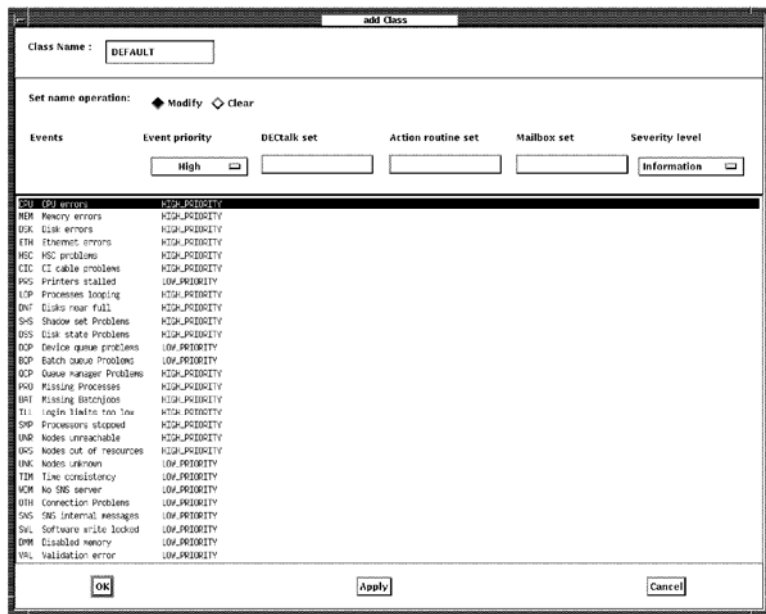The following shows the Add Class window. Select the window as follows:

1. Click on Commands
2. Click on Add
3. Click on Class...
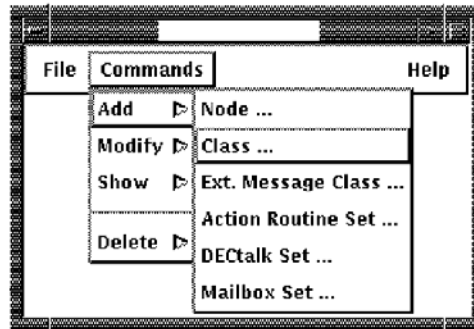
Click on the following boxes or items to enter or change the necessary values:

Class Name:	Name of the event class. The default name is DEFAULT.
Set name operation:	Sets the mode for the selected row so you can modify or clear the current settings. The default is Modify.
Events	Each event is listed on a separate row. Click on a row to enable the row for the following operations.
Event priority:	Select the priority levels for the event. Valid priority levels are High, Low, Not checked, and Not displayed. The default is High.
DECtalk set:	Enter the name of a defined DECtalk set.
Action routine set:	Enter the name of a defined action routine set.
Mailbox set:	Enter the name of a defined mailbox set.
Severity level:	Select the mailbox set severity level. Valid severity levels are Information, Success, Error, Warning, and Fatal. The default is Information.

Add Class Window

Adding an External Message Class

The following shows the Add External Message Class window. Select the window as follows:

1. Click on Commands

2. Click on Add

3. Click on External Message Class...

Click on the following boxes or items to enter or change the necessary values:

External Message Class Name:	Name of the external message class. The default name is DEFAULT.
Operation:	Select a row for edition. The settings will appear in the edition fields. Fields may be altered. Then click on one of the following buttons:
	Insert: Inserts a new row using the settings.
	Modify: Modifies the selected row with the edited settings.
	Delete: Deletes the selected row.
Set name operation:	Selects the mode for the selected row so you can modify or clear the current settings. The default is Modify. Clicking on an event row enables the row.

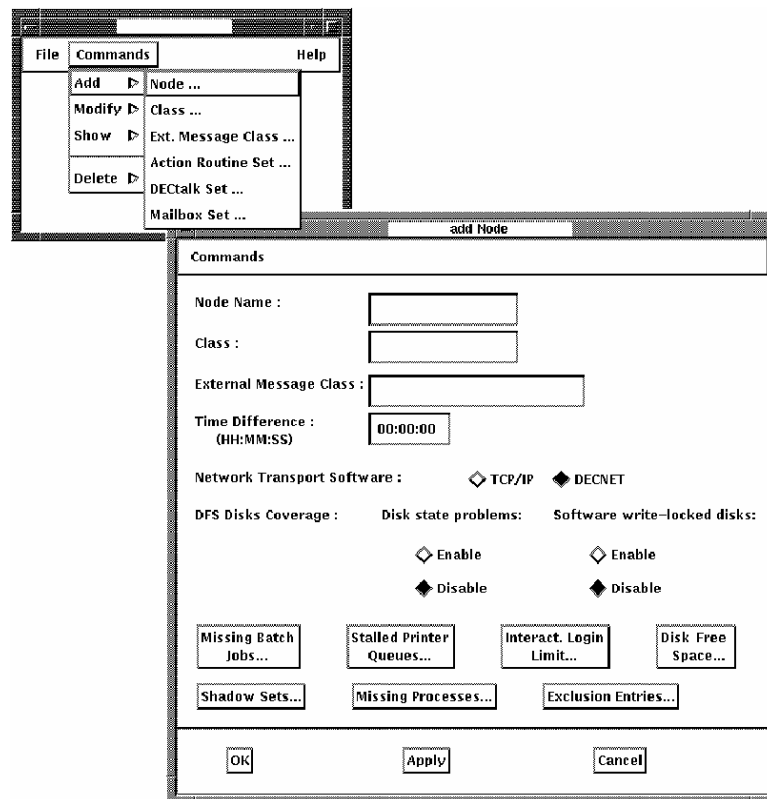**Add External Message Class Window**
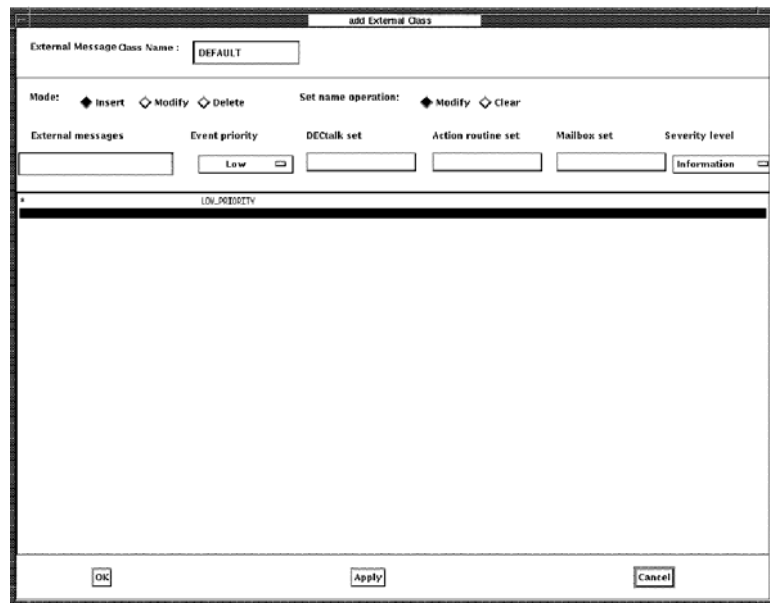
External messages:	Click on an event message row to activate the row then click on the External messages box. You can then add external message text in the selected row.
Event priority:	Click on Event priority to list the priority levels for the event. Valid priority levels are High, Low, Not checked, and Not displayed. The default is High.
DECtalk set:	Click on the box, then double-click on the name of a defined DECtalk set in the Select DECtalk Set window.
Action routine set:	Click on the box, then double-click on the name of a defined action routine set in the Select Action Routine Set window.
Mailbox set:	Click on the box, then double-click on the name of a defined mailbox set in the Select Mailbox Set window.
Severity level:	Click on Severity level to list the severity levels for the mailbox set. Valid severity levels are Information, Success, Error, Warning, and Fatal. The default is Information.

Adding a Node

The following shows the Add Node window. Select the window as follows:

1. Click on Commands

2. Click on Add

3. Click on Node...

Add Node Window

Click on the following boxes or items to enter or change the necesssary values:

Commands menu:	Opens the Copy Node window so you can copy all of the information in the current node entry to a new node entry without dismissing the Add Node window. You can open the Copy Node window as follows:
	1. Click on Commands.
	2. Click on Copy.
	In the Copy Node window, you can include existing node objects and exclusions in the copy by clicking on the appropriate button. See the Adding Entries to a Profile section for more information on how to use the Modify windows to copy profile entries.
Node Name:	Enter the name of the node to be polled. The information must be entered separately for each node. The cluster alias cannot be used.
Class:	Enter the name of the event class that the node is to be monitored under. The default class is DEFAULT.
External Message Class:	Enter the name of the class to be used for external messages. The default external message class is DEFAULT.
Time Difference:	Time difference between the polled node and the node running the Watchdog Manager. Time can be expressed as plus or minus up to 24:00:00 hours. The default is 0:0:0.
Network Transport Software:	Specifies the network transport for the Watchdog Manager to use to access the Watchdog Agent running on the polled node. Valid transports are DECnet and TCP/IP. The default is DECnet.
DFS Disks Coverage:	Specifies whether DFS disks are covered by the event codes Disk state problems (DSS) or Software write-locked disks (SWL).
Node objects:	The valid node objects have corresponding buttons in the Add Node window.
	Node objects can only be added if the node has been defined in the profile. To add node objects from the Add window, first click on Apply to enter the node in the profile. You can then add or modify the node objects as described in Adding Node Objects and Exculsions.

Adding Node Objects and Exclusions

To add node objects or exclusions, the node must first be defined in the profile as described in the Add Node section. To open a node object or exclusions window, click on the button in the Add Node window.

The valid node object buttons shown in the Add Node window are:

■ Missing Batch Jobs...

■ Stalled Printer Queues...

■ Interactive Login Limit...

■ Disk Free Space...

■ Shadow Sets...

■ Missing Processes...

■ Exclusion Entries...

The Adding Entries to a Profile section provides guidelines for using the Modify command to add or copy multiple nodes or multiple nodes with node objects.

The mode buttons in the node object and exclusions windows enable the operating mode to be applied to the selected object. The modes enable the following:

Add	Add a new item for coverage. Enter the item from the keyboard then click on Apply or OK to add the item to the Current items list box. The default is Add.
Modify	Select an item in the Current items list box. You can click on the button first, then the item, or you can click on the item first, then the button. You can change the item or its attributes from the keyboard, then click on Apply or OK to enter the changes.
Delete	Delete an item in the Current items list box. You can click on the button first, then the item, or click on the item first, then the button. Click on Apply or OK to delete the item.

Missing Batch Jobs
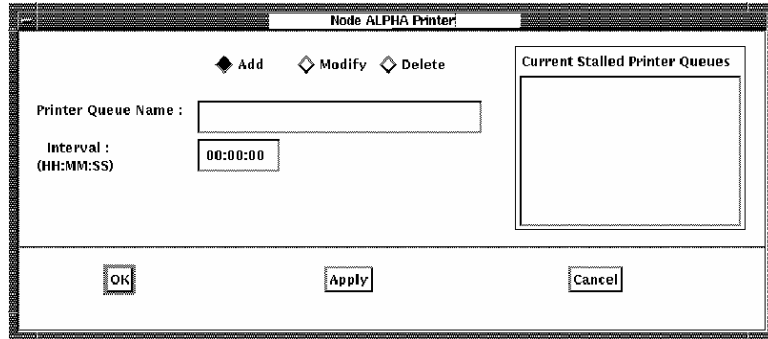
The following shows the Missing Batch Jobs window.
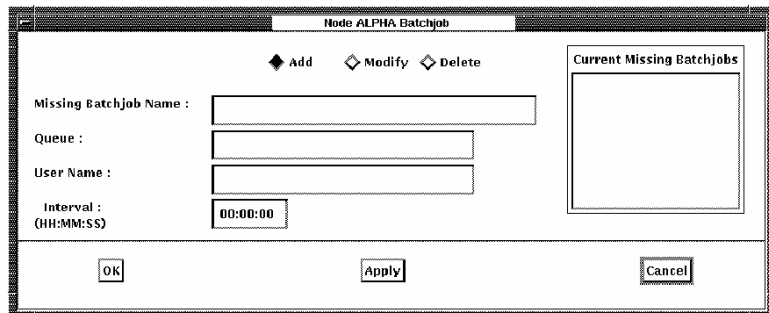
Click on the following boxes or items to enter the necessary values:

Add	Add mode enables you to enter a batch job for coverage. The default is Add.
Modify	Modify mode enables you to modify a batch job in the Current Missing Batchjobs list box. Click on Apply or OK to enter the changes.
Delete	Delete mode enables you to delete a batch job from the Current Missing Batchjobs list box. Click on Apply or OK to delete the batch job.
Missing Batchjob Name:	Enter the name of the batch job to be covered.
Queue:	Batch queue name under which the batch job is to be submitted. The default is SYS$BATCH.
User Name:	User name under which the batch job is to be submitted. The default is SYSTEM.
Interval:	Set the polling interval for the missing batch jobs object. The typical value is 00:10:00 (10 minutes).

Stalled Printer Queues

The following shows the Stalled Printer Queues window.

```
┌──────────────────────────────────────────────────────────────┐
│                        Node ALPHA Printer                      │
├──────────────────────────────────────────────────────────────┤
│                                                                │
│           ◆ Add      ◇ Modify  ◇ Delete    ┌─────────────────┐ │
│                                            │Current Stalled  │ │
│   Printer Queue Name :  ┌─────────────┐    │Printer Queues   │ │
│                         └─────────────┘    │                 │ │
│        Interval :       ┌────────┐         │                 │ │
│       (HH:MM:SS)        │00:00:00│         │                 │ │
│                         └────────┘         │                 │ │
│                                            └─────────────────┘ │
│                                                                │
│      ┌────┐            ┌───────┐              ┌──────┐          │
│      │ OK │            │ Apply │              │Cancel│          │
│      └────┘            └───────┘              └──────┘          │
└──────────────────────────────────────────────────────────────┘
```

Click on the following boxes or items to enter the necessary values:

Add	Add mode enables you to enter a printer queue for coverage. The default is Add.
Modify	Modify mode enables you to modify a printer queue in the Current Stalled Printer Queues list box. Click on Apply or OK to enter the changes.
Delete	Delete mode enables you to delete a printer queue from the Current Stalled Printer Queues list box. Click on Apply or OK to delete the printer queue.
Printer Queue Name:	Print queue name under which the print job is to be submitted. The default is SYS$PRINT.
Interval:	Set the polling interval for the stalled printer queues object. The typical value is 00:10:00 (10 minutes).

Interactive Login Limit

The following shows the Interactive Login Limit window.
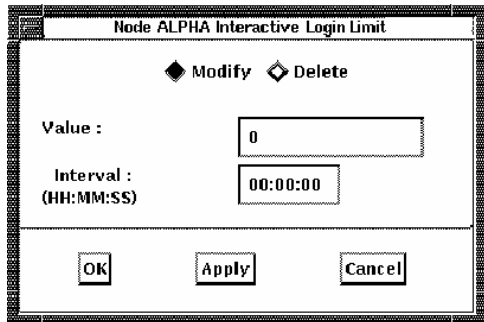
Click on the following boxes or items to enter the necessary values:

Modify	The Modify button enables you to set or change the interactive login limit value or interval. Click on Apply or OK to enter the value. The default is Modify.
Delete	The Delete button enables you to set the selected value to zero. Click on Apply or OK to delete the value.
Value:	Enter the login limit comparison value. The default is 0.
Interval:	Set the polling interval for the interactive login limit object. A typical value is 00:10:00 (10 minutes).

Disk Free Space

The followingshows the Disk Free Space window.
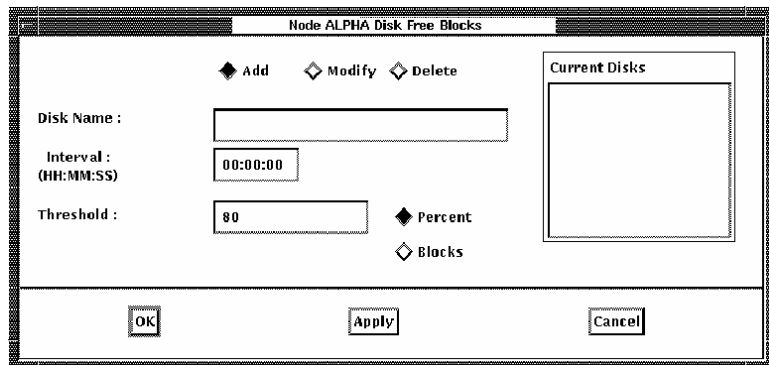
Click on the following boxes or items to enter the necessary values:

Add	Add mode enables you to enter a disk for free space coverage. The default is Add.
Modify	Modify mode enables you to modify a disk in the Current Disks list box. Click on Apply or OK to enter the changes.
Delete	Delete mode enables you to delete a disk from the Current Disks list box. Click on Apply or OK to delete the disk.
Disk Name:	Enter the name of the disk to be added for free space coverage.
Interval:	Set the polling interval for the disk free space object. A typical value is 00:10:00 (10 minutes).
Threshold:	Free space remaining on disk. Click on the Threshold box to change the remaining free disk space threshold. The default is 80 percent.
	To set the threshold in number of blocks, click on Blocks then click on the Threshold box to set the number value.

Shadow Sets

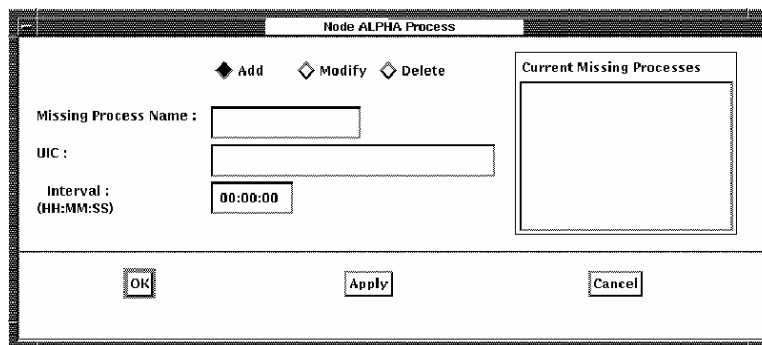The following shows the Shadow Sets window.
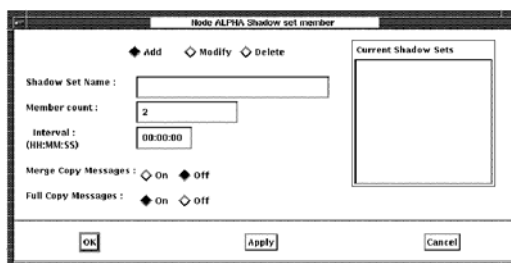
Click on the following boxes or items to enter the necessary values:

Add	Add mode enables you to enter a shadow set for coverage. The default is Add.
Modify	Modify mode enables you to modify a shadow set in the Current Shadow Sets list box. Click on Apply or OK to enter the changes.
Delete	Delete mode enables you to delete a shadow set from the Current Shadow Sets list box. Click on Apply or OK to delete the shadow set.

Shadow Set Name:	Enter the name of the shadow set to be covered.
Member count:	Number of members in the shadow set. The default is 2.
Interval:	Set the polling interval for the shadow sets object. A typical value is 01:00:00 (1 hour).
Merge Copy Messages:	Click on On to merge the shadow set copy messages into one file. The default is Off.
Full Copy Messages:	Click on Off to output simplifed copy messages. The default is On (full message text).

Missing Processes

The following shows the Missing Processes window.

Click on the following boxes or items to enter the necessary values:

Add	Add mode enables you to enter a process for coverage. The default is Add.
Modify	Modify mode enables you to modify a process in the Current Missing Processes list box. Click on Apply or OK to enter the changes.
Delete	Delete mode enables you to delete a process from the Current Missing Processes list box. Click on Apply or OK to delete the process.
Missing Process Name:	Enter the name of the process to be added for coverage.

UIC:	Set the user identification code for the process. A typical value is [1,4].
Interval:	Set the polling interval for the missing processes object. A typical value is 00:10:00 (10 minutes).

Exclusion Entries

The following shows the Exclusions Entries window.

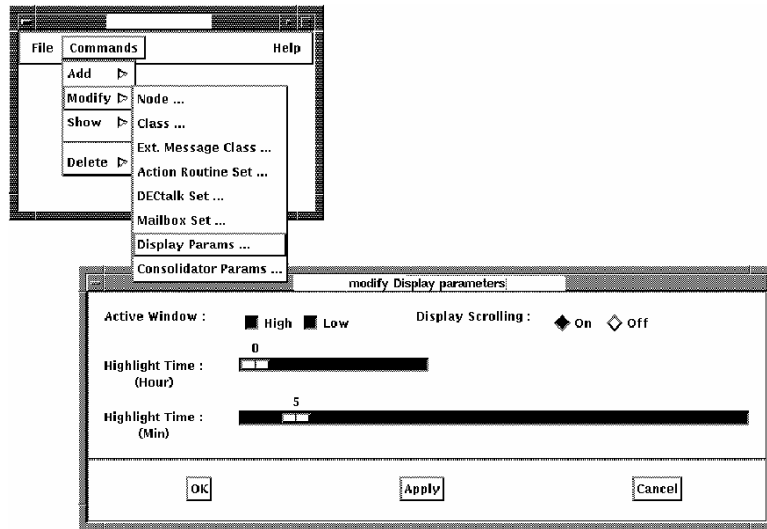Click on the following boxes or items to enter the necessary values:

Add	Add mode enables you to enter exclusions for coverage. The default is Add.
Delete	Delete mode enables you to delete an exclusion from the Exclusions list box. Click on Apply or OK to delete the exclusion.
Event Codes:	List of event codes supporting exclusions. Click on an event in the Event Codes list box, then click on the Wildcarded Exclusion box and enter an exclusion from the keyboard. Click on Apply to add the exclusion to the event code list.
Exclusions:	Displays a list of the currently excluded items.
Wildcarded Exclusion:	Click on the Wildcarded Exclusion box then enter an exclusion device from the keyboard. You can enter a single device, such as DUA01: or DUB05:, or use the wildcard character (*)to exclude all devices of one type. DUA*: and 1DUB*: are examples of disks excluded with the wildcard. The colon (:) is required.

Verifying Display Parameters

The following shows the Modify Display Parameters window. Select the window as follows:

1. Click on Commands

2. Click on Modify

3. Click on Display Parameters...

Modify Display Parameters Window

The Modify Display Parameters window shows the default parameters for your display terminal.

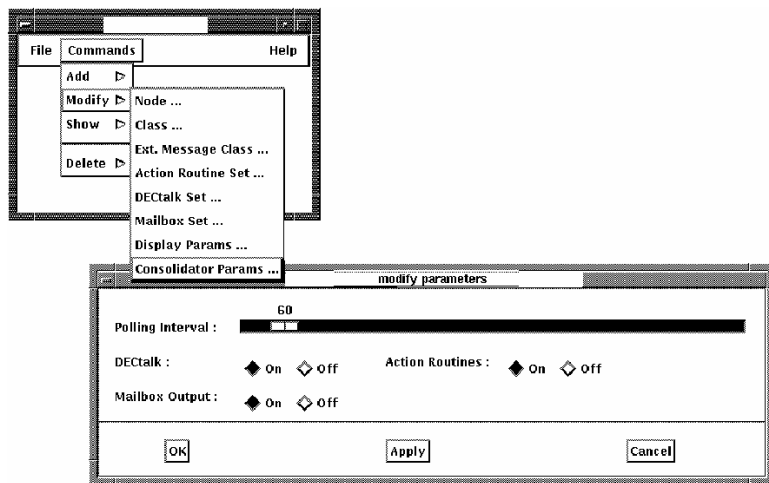Click on the following boxes or items to change the necessary values:

Active Window:	The High and Low buttons enable and disable the display of either High or Low priority event messages or both. The default is both enabled (High and Low).
Display Scrolling:	The On and Off buttons enable or disable scrolling of the continuous event messages screen. The default is On (enabled).
Highlight Time: (Hour)	The number of hours that an added or updated event message is to be highlighted. Use the slider to set the hour value. The range is 0 to 23 hours. The default is 0.
Highlight Time: (Min)	The number of minutes that an added or updated event message is to be highlighted. Use the slider to set the minute value. The range is 0 to 59 minutes. The default is 5.

Verifying Watchdog Manager Parameters

The following shows the Modify Watchdog Manager Parameters window. Select the window as follows:

1. Click on Commands

2. Click on Modify

3. Click on Watchdog Manager Parameters...

Modify Watchdog Manager Parameters Window

The Modify Watchdog Manager Parameters window shows the default polling interval and notification options for Watchdog Manager processes using the profile.

Click on the following boxes or items to change the necessary values:

Polling Interval:	The interval in seconds between poll requests that the Watchdog Manager sends to the active Watchdog agents. The range is 0 to 999. The default is 60.
DECtalk:	The On and Off buttons enable or disable the use of the DECtalk sets defined in the profile. The default is On (enabled).

Action Routines:	The On and Off buttons enable or disable the use of the action routine sets defined in the profile. The default is On (enabled).
Mailbox Output:	The On and Off buttons enable or disable the use of the mailbox sets defined in the profile. The default is On (enabled).

Verifying Profile Contents

The following shows the Show Profile window. Select the window as follows:

1. Click on Commands

2. Click on Show

3. Click on Profile...

The Show Profile window shows the contents of the currently open profile.

To see the remaining profile contents, you can resize the screen or use the scroll bar on the right side of the screen. For an extended profile, the Previous and Next buttons are activated so you can step through the display one screen at a time.

The Dismiss button cancels the window.

Show Profile Window
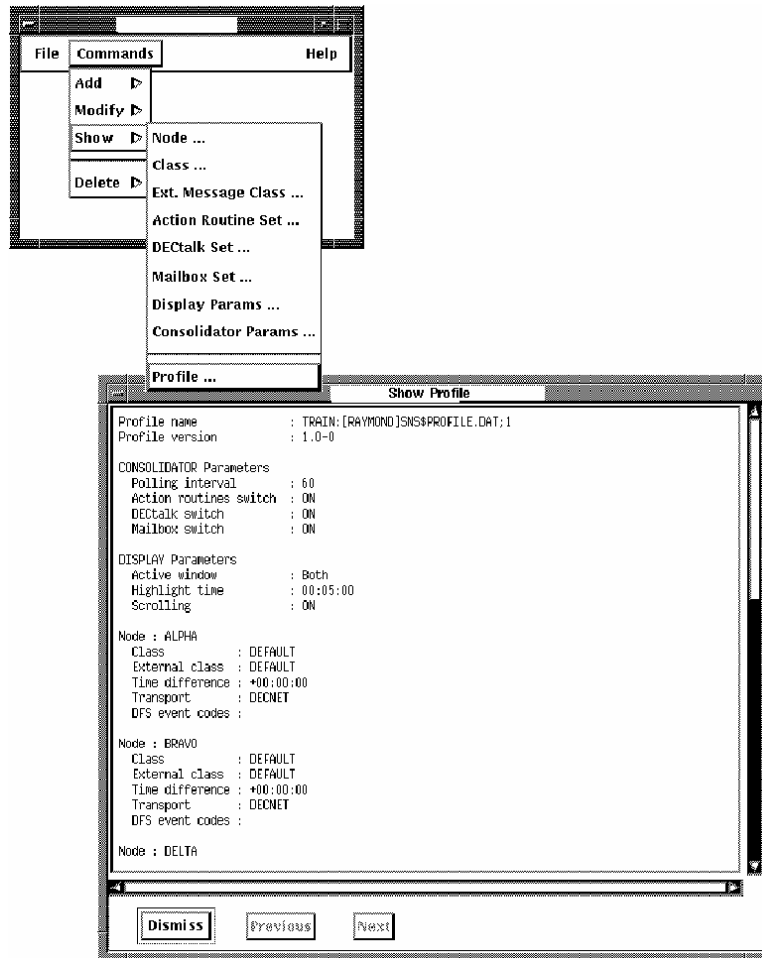
User Programming

This chapter provides guidelines for developing action routines and OpenVMS mailbox reader programs.

Using Action Routines

Action routines can correct detected problems, leaving operations personnel free to perform more complex tasks. An action routine is executed in one of two modes as defined by the action routine set in the profile:

- Batch mode

- Spawn mode

Action Routine Parameters

The Watchdog Manager passes a set of parameters to the batch job or spawned subprocess as defined by the action routine set. The following are the action routine parameters:

- P1 — Event message text as displayed on the screen (132 characters)

- P2 — Complete event message date and time-stamp (23 characters)

- P3 — Event code describing the type of message (9 characters)

- P4 — Node name (16 characters)

- P5 — Cluster name (16 characters, can be blank depending on the type of message)

- P6 — Action routine set name (16 characters)

- P7 — New/Update/Removed message flag (12 characters)

- P8 — Match string data substituted in the event message fields, separated by vertical bars (|) (132 characters).

Parameter Values

Parameter P1 includes the vertical bar (|) character for external messages.

Parameter P5 can be blank, depending on the type of message.

Parameter P7 can have one of the following values:

- SNS_C_NEW (for new messages)
- SNS_C_UPD (for updated messages)
- SNS_C_REM (for removed messages)
- Unsupported
- An unsupported message only appears if:
  - You add an event entry to an action routine set in the profile for a currently active event message.
  - You reconfigure the Watchdog Manager using the updated profile.

At the end of the next scan, if the event remains active, the Watchdog Manager triggers the action routine. Because the Watchdog Manager cannot evaluate the event as NEW, REM, or UPD, the Watchdog Manager reports the P7 value as unsupported.

Parameter P8 is a fill-in string from the event message, separated by vertical bars. For example, if the P1 message text is "Disk DUA0 has less than 6% (21242) free blocks," the P8 string values are"DUA0|6|21242."

Batch Mode Operation

Batch mode uses a DCL command procedure that is specified by the action routine set. The command procedure contains a set of DCL commands which can perform a number of functions that include writing to the display or sending a VAX mail message in the following formats:

```
$!
$!Write the event message (P1 to the batch log file:
$!
$      WRITE SYS$OUTPUT P1
$!
$!Write "*** " then SNS_C_NEW/UPD/REM (P7) information to the batch log file:
$!
$      WRITE SYS$OUTPUT "*** ",P7
$!
$!If the event is new, send mail to the operator:
$!
$      IF ( P7 .eqs. "SNS_C_NEW" ) THEN -
MAIL/SUBJ="FROM SNS: ''P1'" NL: OPERATOR
$!)
```

Spawn Mode Operation

Spawn mode uses a DCL command that is specified by the action routine set. The command format depends on the following:

- If the first character is @, the command has the following format:

  ```
  @DCL_command P1 P2 P3 P4 P5 P6 P7 P8
  ```

- If the first character is not @, the parameters are substituted wherever the vertical bar parameter (|) appears in the command string (where n is a value of 1 to 8). The total string length is 255 characters, beyond which the parameters are truncated. For example, the following command uses the P1 parameter to pass mail message text to the user in the subject field:

  ```
  MAIL/SUBJECT="FROM SNS: |P1" NL: OPERATOR
  ```

Using Mailbox Reader Programs

Mailbox sets can be used to write messages to an OpenVMS mailbox for further processing by a user-supplied program. The mailbox reader program must perform the following:

1. Open an OpenVMS mailbox to receive Watchdog Manager mailbox notifications.

2. Assign a logical name to the mailbox.

3. Post a READ and wait for mailbox input from the Watchdog Manager.

4. Process the record.

5. Perform the necessary actions.

6. Go back and post another READ.

The profile used by the Watchdog Manager must have a mailbox set with the logical name of the program's mailbox.

OpenVMS Mailbox Fields

When triggered by an event, the Watchdog Manager sends a record to the mailbox reader program in the following format:

- F1 — Event message text as displayed on the screen (132 characters)

- F2 — Complete event message date and time-stamp (23 characters)

- F3 — Event code describing the type of message (9 characters)

- F4 — Node name (16 characters)

- F5 — Cluster name (16 characters)

- F6 — Mailbox set name (16 characters)

- F7 — New/Update/Removed message flag (12 characters)

- F8 — Severity level (12 characters)

- P8 — Match string data substituted in the event message fields, separated by vertical bars (|) (132 characters).

Field Values

Field F1 includes the vertical bar (|) character for external messages.

Field F5 can be blank, depending on the type of message.

Field F7 can have one of the following values:

- SNS_C_NEW (for new messages)

- SNS_C_UPD (for updated messages)

- SNS_C_REM (for removed messages)

- Unsupported

  An unsupported message only displays under the following conditions:

  – When you add an event entry to a mailbox set in the profile for a currently active event message.

  – When you reconfigure the Watchdog Manager using the updated profile.

  – At the end of the next scan, if the event remains active, the Watchdog Manager triggers the mailbox set. Because the Watchdog Manager cannot evaluate the event as NEW, REM, or UPD, the Watchdog Manager reports the F7 value as unsupported.

Field F8 can have one of the following values:

- Information

- Error

- Fatal

- Warning

- Success

Field F9 is a fill-in string from the event message, separated by vertical bars. For example, if the F1 message text is "Disk DUA0 has less than 6% (~21242) free blocks," the F9 string values are "DUA0|6|21242."

Controller Command Summary

Overview

The following is a summary of the Watchdog Manager controller commands. See the "Controller Commands" chapter for detailed descriptions of all commands and qualifiers. The ADD MESSAGE and DELETE MESSAGE commands are also used by the Watchdog Agent.

Commands

ADD MESSAGE "Message text" [/qualifier...]

    Qualifiers:

        /NODE=name

        /TRANSPORT=TCPIP | DECnet (D)

        /LOG | /NOLOG (D)

CONVERT file1 file2

DELETE MESSAGE "Message text" [/qualifier...]

    Qualifiers:

        /NODE=name

        /TRANSPORT=TCPIP | DECnet (D)

        /LOG | /NOLOG (D)

DISABLE LOG

DISABLE NODE [name,...] [/CLASS=(class_name,...)]

DISABLE NOTIFICATION [MAILBOX,DECtalk,ACTION_ROUTINE]

EDIT PROFILE [filename] [/qualifier]

    Qualifiers:

        /OUTPUT=filename | /INTERFACE=DECwindows

ENABLE LOG

ENABLE NODE [name,...] [/CLASS=(class_name,...)]

ENABLE NOTIFICATION [MAILBOX,DECtalk,ACTION_ROUTINE]

EXIT

HELP [command [option [option]]]

HIDE MESSAGE "node_name message text" [/qualifier]

    Qualifiers:

        /LOG | /NOLOG (D)

POLL [/RESET_LAST_SCAN]

RECONFIGURE [/qualifier...]

    Qualifiers:

        /PROFILE=filenamne

        /FIRST_SCAN=([NO]MAILBOX,[NO]DECtalk,
          [NO]ACTION_ROUTINE) (Default is all items enabled.)

        /INFORMATION="message text"

        /DISCARD=(MESSAGES,DISABLED_NODES) | ALL

        /WAIT | /NOWAIT (D)

SET COLLECTING [/qualifier...]

    Qualifiers:

        /SINCE=time

        /BEFORE=time

SET CONSOLIDATOR [nnnn]

SET LOG filename

SET POLLING_INTERVAL seconds

SHOW CONSOLIDATOR [nnnn] [/qualifier...]

    Qualifiers:

        /ALL

        /FULL | /BRIEF (D)

        /OUTPUT=filename

SHOW EVENTS [/qualifier...]

    Qualifiers:

        /PRIORITY=HIGH | LOW | BOTH (D)

        /HIDDEN | /NOHIDDEN (D)

        /EVENT_CODES=(code,...)

        /NODES=(name,...)

        /SINCE=time

        /BEFORE=time

        /OUTPUT=filename

SHOW EVENTS /CONTINUOUS [/qualifier...]

    Qualifiers:

        /PRIORITY=HIGH | LOW | BOTH (D)

        /HIDDEN | /NOHIDDEN (D)

        /EVENT_CODES=(code,...)

        /NODES=(name,...)

        /SINCE=time

        /BEFORE=time

        /HIGHLIGHT_TIME=hh:mm:ss

        /ENABLE=SCROLLING

        /DISABLE=SCROLLING

SHOW LOG [filename] [/qualifier...]

    Qualifiers:

        /OUTPUT=filename

        /SINCE=time

        /BEFORE=time

        /EVENT_CODES=(code,...)

/NODES=(name,...)

/RECORD_TYPE=(START_STOP,MESSAGE,DECtalk,
ACTION_ROUTINE,MAILBOX)

SHOW MESSAGE "node_name message text" [/qualifier]

Qualifiers:

/LOG | /NOLOG (D)

START CONSOLIDATOR [/qualifier...]

Qualifiers:

/PROFILE=filename

/FIRST_SCAN=([NO]MAILBOX,[NO]DECtalk,[NO]ACTION_ROUTIN
E) (Default is all items enabled.)

/INFORMATION="message text"

/ACCESS=([NO]WORLD,[NO]GROUP,[NO]SYSTEM)

/UIC=[m,n] | [name] | [group,name]

/OUTPUT=filename

/ERROR=filename

/[NO]WAIT

STOP CONSOLIDATOR [nnnn] [/ALL]

Profile Editor Command Summary

Overview

The following is a list of the Watchdog Manager profile editor commands. See the "Profile Editor Commands" chapter for detailed descriptions of all commands and qualifiers.

Commands

@filename

ADD ACTION_ROUTINE_SET set_name /qualifier...

Qualifiers:

/MODE=SPAWN | BATCH (D)

/USERNAME=username (Applies when /MODE=BATCH. Default is SYSTEM.)

/PROCEDURE=proc_name (Required, applies when /MODE=BATCH.)

/QUEUE=queue_name (Applies when /MODE=BATCH. Default is SYS$BATCH.)

/COMMAND=command (Required, applies when /MODE=SPAWN.)

/OUTPUT=filename (Applies when /MODE=SPAWN.)

/LOG_FILE | /NOLOG_FILE (D) (Applies when /MODE=BATCH or SPAWN.)

ADD CLASS class_name

ADD DECtalk_SET set_name /qualifier...

    Qualifiers:

        /LINE=port (Required. For example, TXA0: or LTA100:)

        /TYPE=DTC01 | DTC03 (D)

        /SPEECH_SPEED=number (Default is 120.)

        /VOICE=voice_type (Default is CHILD.)

        /DIALING_TYPE=TONE | PULSE (D)

        /REPEAT_COUNT=number (Default is 3.)

        /MESSAGE_TYPE=BRIEF | FULL (D)

        /KEYSTROKE_TRIALS=number (Default is 0.)

        /WELCOME_TEXT="message text" (Default is empty string.)

ADD EXTERNAL_MESSAGE_CLASS ext_class_name

ADD MAILBOX_SET set_name /MAILBOX=name

ADD NODE node_name /qualifier...

    Qualifiers:

        /CLASS=class_name (Default is DEFAULT.)

        /EXTERNAL_MESSAGE_CLASS=ext_class_name (Default is DEFAULT.)

        /TIME_DIFFERENCE=time (Default is 0:0:0.)

        /DFS=event_code | /NODFS (D) (SWL, DSS valid.)

        /TRANSPORT=TCPIP | DECnet (D)

ADD NODE node_name node_object name2 [name3 [name4]] [/qualifier]

    Qualifier:

        /INTERVAL=hh:mm:ss (Default is 00:10:00. Applies to all node objects except EXCLUSION.)

    Valid node_objects:

        BATCHJOB name2 [name3] [name4] (Defaults are SYSTEM, SYS$BATCH.)

        FREE_BLOCKS name2 /qualifier /PERCENT=number | /BLOCKS=number

LOGINS /LIMIT=number

PRINTER_QUEUE [name2] (Default is SYS$PRINT.)

PROCESS name2 [name3] (Default is [1,4].)

SHADOW_SET name2 /qualifier...
  /FULL_COPY (D) | /NOFULL_COPY
  /MERGE_COPY | /NOMERGE_COPY (D)
  /MEMBERS=number (Default is 2.)

EXCLUSION event_code name3

COPY ACTION_ROUTINE_SET set_name new_set_name

COPY CLASS class_name new_class_name

COPY DECtalk_SET set_name new_set_name

COPY EXTERNAL_MESSAGE_CLASS ext_class_name new_ext_class_name

COPY MAILBOX_SET set_name new_set_name

COPY NODE node_name1 node_name2 [/qualifier...]

  Qualifiers:

    /PROCESS | /NOPROCESS (D)

    /BATCHJOB | /NOBATCHJOB (D)

    /FREE_BLOCKS | /NOFREE_BLOCKS (D)

    /LOGINS | /NOLOGINS (D)

    /PRINTER_QUEUE | /NOPRINTER_QUEUE (D)

    /SHADOW_SET | /NOSHADOW_SET (D)

    /EXCLUSION | /NOEXCLUSION (D)

    /ALL

DELETE ACTION_ROUTINE_SET set_name

DELETE CLASS class_name

DELETE DECtalk_SET set_name

DELETE EXTERNAL_MESSAGE_CLASS ext_class_name

DELETE MAILBOX_SET set_name

DELETE NODE node_name [/ALL]

DELETE NODE node_name node_object name2 [name3 [name4]]

    Valid node_objects:

        BATCHJOB name2 [name [name4]]

        FREE_BLOCKS name2

        LOGINS

        PRINTER_QUEUE [name2]

        PROCESS name2 [name3]

        SHADOW_SET name2

        EXCLUSION event_code name3

EXIT

HELP [command [option [option]]]

MODIFY ACTION_ROUTINE_SET set_name /qualifier...

    Qualifiers:

        /MODE=SPAWN | BATCH

        /LOG_FILE | /NOLOG_FILE (D) (Applies when
         /MODE=BATCH or SPAWN.)

        /PROCEDURE=proc_name (Applies when /MODE=BATCH.)

        /USERNAME=username (Applies when /MODE=BATCH.)

        /QUEUE=queue_name (Applies when /MODE=BATCH.)

        /COMMAND=command (Applies when /MODE=SPAWN.)

        /OUTPUT=filename (Applies when /MODE=SPAWN.)

MODIFY CLASS class_name /qualifier...

    Qualifiers:

        /EVENT=(event_code,...)

        /PRIORITY=HIGH | LOW | NOT_CHECKED | NOT_DISPLAYED

        /NOACTION_ROUTINE_SET | /ACTION_ROUTINE_SET=set_name

        /NODECtalk_SET | /DECtalk_SET=set_name

        /NOMAILBOX_SET | /MAILBOX_SET=set_name

        /SEVERITY=INFORMATION | SUCCESS | ERROR | WARNING |
         FATAL

MODIFY DECtalk_SET set_name /qualifier...

    Qualifiers:

        /SCHEDULE=string /DAY=(day,...)

        /PHONE_NUMBER=string /OPERATOR=1 | 2 /DAY=(day,...)
         where day can be MONDAY, ..., SUNDAY |
         EVERYDAY | WEEKDAYS | WEEKENDS

        /DELAY=hh:mm:ss /OPERATOR=oper /DAY=(day,...)

        /LINE=port (For example: TXA0: or LTA100:)

        /TYPE=DTC01 | DTC03

        /SPEECH_SPEED=number

        /VOICE=voice_type

        /DIALING_TYPE=TONE | PULSE

        /REPEAT_COUNT=number

        /MESSAGE_TYPE=FULL | BRIEF

        /KEYSTROKE_TRIALS=number

        /WELCOME_TEXT="message text"

MODIFY EXTERNAL_MESSAGE_CLASS ext_class_name /qualifier...

    Qualifiers:

        /TEXT="message text"

        /POSITION=number

        /DELETE

        /INSERT

        /PRIORITY=HIGH | LOW | NOT_CHECKED | NOT_DISPLAYED

        /ACTION_ROUTINE_SET=set_name | /NOACTION_ROUTINE_SET

        /DECtalk_SET=set_name | /NODECtalk_SET

        /MAILBOX_SET=set_name | /NOMAILBOX_SET

        /SEVERITY=INFORMATION | SUCCESS | ERROR | WARNING |
          FATAL

MODIFY MAILBOX_SET set_name /MAILBOX=name

MODIFY NODE node_name /qualifier...

    Qualifiers:

        /CLASS=class_name

        /EXTERNAL_MESSAGE_CLASS=ext_class_name

        /TIME_DIFFERENCE=time

        /NODFS | /DFS=(SWL,DSS)

        /TRANSPORT=TCPIP | DECnet

MODIFY NODE node_name node_object name2 [name3 [name4]] [/qualifier]

    Qualifier:

        /INTERVAL=hh:mm:ss

    Valid node_objects:

        BATCHJOB name2 [name [name4]]

        FREE_BLOCKS name2 /qualifier
          /PERCENT=number | /BLOCKS=number

        LOGINS /LIMIT=number

        PRINTER_QUEUE [name2]

        PROCESS name2 [name3]

SHADOW_SET name2 /qualifier...
   /FULL_COPY | /NOFULL_COPY
   /MERGE_COPY | /NOMERGE_COPY
   /MEMBERS=number

EXCLUSION event_code name3
   /NEW_TEXT=item (Replaces name3-specified item.)

QUIT

SET CONSOLIDATOR /qualifier...

   Qualifiers:

      /POLLING_INTERVAL=seconds

      /ENABLE=(DECtalk, MAILBOX, ACTION_ROUTINE)

      /DISABLE=(DECtalk, MAILBOX, ACTION_ROUTINE)

SET DISPLAY /qualifier...

   Qualifiers:

      /PRIORITY=HIGH | LOW | BOTH (D)

      /HIGHLIGHT_TIME=hh:mm:ss

      /ENABLE=SCROLLING | /DISABLE=SCROLLING

SHOW entry [/qualifier...]

   Entries:

      ALL

      CLASS wildcarded_class_name

      CONSOLIDATOR

      DISPLAY

      NODE wildcarded_node_name

      ACTION_ROUTINE_SET set_name

      DECtalk_SET set_name

      EXTERNAL_MESSAGE_CLASS ext_class_name

      MAILBOX_SET set_name

Qualifiers:

   /ALL (SHOW NODE only)

   /OUTPUT=filename (Default is SYS$OUTPUT.)

   /FORMAT=COMMANDS | LIST (D)

   /BATCHJOB | /NOBATCHJOB (D)

   /EXCLUSION | /NOEXCLUSION (D)

   /FREE_BLOCKS | /NOFREE_BLOCKS (D)

   /LOGIN_LIMIT | /NOLOGIN_LIMIT (D)

   /PRINTER_QUEUE | /NOPRINTER_QUEUE (D)

   /PROCESS | /NOPROCESS (D)

   /SHADOW_SET | /NOSHADOW_SET (D)

SPAWN [DCL_command]

Logical Names Used by System Watchdog

Overview

There are a number of logical names that change the behavior of the System Watchdog software. All of them must be defined in the system table.

Logical Names

The logical names used by System Watchdog are shown in the following table:

Name	Meaning
SNS$ADD_CI_PORT_TYPE	Adds CI port types to the list built in to the agent. The built-in list is "2, 4, 11, 14, 15". The logical name definition is in the same format as the built-in list.
SNS$ADD_ETHERNET_DEVNAME	Adds Ethernet device names to the list built in to the agent. The built-in list is "XQ, XE, ET, ES, EX". The logical name definition is in the same format as the built-in list.
SNS$ADD_RO_DISK_DEVTYPE	Adds read-only disk device types to the list built in to the agent .The built-in list is "34,52,53,72,139,140". The logical name definition is in the same format as the built-in list.

Name	Meaning
SNS$CLUSTER_NAME	Defines the cluster name to use when sys$cluster_node can not be used. If sns$cluster_name is defined at Watchdog Agent startup, sys$cluster_node is ignored.
SNS$CONSOLIDATOR_EXE	Defines the new location of the CONSOLIDATOR executable file. If not defined the default is SYS$SYSTEM.
SNS$CONSOLIDATOR_ID	The ID number of the Watchdog Manager. Read only.
SNS$CONVERT_EXE	Defines the new location of the CONVERT utility executable file. If not defined the default is SYS$SYSTEM.
SNS$DECNET_IO_RETRY	Defines the maximum number of retries when a READ/WRITE command is done on a bad DECnet connection. The default value is 50.
SNS$DECNET_OBJECT_NAME	Defines a new name for the Watchdog Agent DECnet object name. The default is SNS$WATCHDOG.
SNS$DECNET_OBJECT_NUMBER	Defines a new value for the Watchdog Agent DECnet object number. The default is 0.
SNS$DECW_EDITOR_EXE	Defines the new location of the DECwindows editor executable file. If not defined the default is SYS$SYSTEM.
SNS$DECW_MAIN_UID	Defines the new location of UID files, used by the DECwindows editor. If not defined the default is SYS$SYSTEM.

Name	Meaning
SNS$DSK_FILTER_OFF	When defined to anything, disables the filtering of disk error counts, i.e. with sns$dsk_filter_off defined, the Watchdog Agent reports every increase in a disk error count.
SNS$EDITOR_EXE	Defines the new location the CLI editor executable file. If not defined the default is SYS$SYSTEM.
SNS$EXAMPLES	Defines the location of System Watchdog examples. The default is SYS$COMMON:[SYSHLP.EXAMPLES.SNS].
SNS$SHOW_EVENT_WAITING_DELAY	Defines the maximum amount of time to wait (during a 'show event') for a node to respond to a poll (no answer has been received from a node during this time) before aborting the connection. The default value is 60 seconds. This time has to be set in seconds.
SNS$TCP_NUMBER	Defines the tcp port number to be used in communicating with Watchdog Agent. The default tcp port number is 251.
SNS$TIME_DIFFERENCE_DELTA	Defines the delta time differences between two nodes. The format must be "HH:MM:SS". in case of a wrong format, the default value "00:05:00" is used.

Name	Meaning
SNS$TITLE	Defines the title displayed at the top of the SHOW EVENTS/CONTINUOUS display. The default title is "Watchdog Manager:". The string should include a trailing space. Including the trailing space, the string can be up to 21 characters for displaying on an 80-column terminal without truncation.
SNS$WAIT_TIME	Defines the wait time from the end of a scan sequence to the beginning of the next scan sequence. The entry is an integral number of seconds. The default is 120 seconds.

Hints and Tips for Using System Watchdog

Overview

This chapter contains a number of hints and tips to help you customize and use System Watchdog.

Hints and Tips

1. **Avoid DCL ASSIGN and DEFINE commands**

   Use SET CONSOLIDATOR rather than the DCL commands ASSIGN and DEFINE. SET CONSOLIDATOR verifies the existence of the Watchdog Manager before assigning the logical name SNS$CONSOLIDATOR_ID. Using ASSIGN or DEFINE may cause problems when the Watchdog Manager deassigns SNS$CONSOLIDATOR_ID when stopping an Watchdog Manager.

2. **Editing a Profile on a Remote Node**

   Both the CLI editor and the DECwindows editor terminate with an RTB (Record Too Big) exception when editing a Profile on another node if the System Network Block Count on the local node is less than 12. You can display this block count with the following command:

   ```
   $ SHOW RMS_DEFAULT
   ```

   On the system on which you wish to run the editor, the following command will allow editing of profiles on remote nodes:

   ```
   $ SET RMS_DEFAULT/SYSTEM/NETWORK=12
   ```

3. **SET LOG File Creation**

   The SENSE WATCHDOGS SET LOG command does not create a new log file if a file by the same name already exists. In this case, the Watchdog Manager appends logging entries to the existing file.

This functionality has not been changed because it is compatible with DCM. The functionality allows more than one Watchdog Manager to write to the same log file (as it allowed more than one DCM_DISPLAY to write to the same log file).

You can rename an existing log file before issuing the SENSE WATCHDOGS SET LOG command in order to force the creation of a new log file. Also, you can direct the Watchdog Manager to create a new log file by using SET LOG log_file.type;n where n is one higher than the version of the current log file.

4. **CLI Editor SHOW /FORMAT=COMMANDS**

When using the output of SHOW NODE /FORMAT=COMMANDS, the SWL exclusion for CSA* (console disks) is in the resulting profile when it was not in the source profile. The SWL exclusion for CSA* is a default exclusion that is included when a node is added to a profile. Use a profile editor to delete this exclusion, if it's not wanted. The CLI editor command is:

```
SNS$EDIT> DELETE NODE node_name EXCLUSION SWL CSA*
```

5. **SHOW CONSOLIDATOR/FULL may not display the OpenVMS Version**

SHOW CONSOLIDATOR/FULL will not display the OpenVMS version on a node being polled when the polled node's SYSGEN parameter SCSNODE is not the same as SYS$NODE. The fix is to set SCSNODE to be the same as SYS$NODE on the polled node using SYSGEN. The change will become effective only after the polled node reboots.

6. **Lock Usage with UNIVMS License**

When using the UNIVMS license (see above), LMF "takes out" a lock each time the Watchdog Manager calls to check that a license exists for a node to be polled. The license checking occurs during the execution of START CONSOLIDATOR and RECONFIGURE commands. Each lock decrements the count against the process ENQLM quota. By default, the Watchdog Manager has an ENQLM quota of 200 allowing the configuration of about 200 nodes. If it is necessary to configure more than 200 nodes using the UNIVMS license, you can increase the Watchdog Manager's ENQLM quota with the following command:

```
$ ASSIGN value SNS$CONSOLIDATOR_ENQLM
```

This command must be entered before entering the START CONSOLIDATOR command.

If you are using the UNIVMS unlimited license, SNS$CONSOLIDATOR_ENQLM quota has no impact on the Watchdog Manager's configuring of nodes because no lock is taken out for each node being configured.

7. **Watchdog Agent Output and Error Files**

   SNS$STARTUP.COM starts the **Watchdog Agent** with the process name SNS$WATCHDOG. The watchdog output file is SNS$WATCHDOG_OUTPUT_node.LOG in SYS$SYSDEVICE:[SNS$WATCHDOG] where node is the DECnet node name (extracted from the logical name SYS$NODE). The watchdog error file is SNS$WATCHDOG_ERROR_node.LOG in SYS$SYSDEVICE:[SNS$WATCHDOG] where node is the DECnet node name (extracted from the logical name SYS$NODE). SNS$WATCHDOG_ERROR_node.LOG contains information on terminations due to an error condition. For example, in the error file you will find the error message stating that a licensing failure occurred when starting the Watchdog Agent.

8. **DECnet Object Behavior, Preventing Spurious Security Intrusions**

   The Watchdog Manager uses the named DECnet object SNS$WATCHDOG. The following list describes the behavior of the Watchdog Manager in various combinations of circumstances:

   - Polled node runs OpenVMS V6.2, or a later, supported version of OpenVMS: Watchdog Agent is supported providing the conditions in the product's description are fulfilled.

     – Watchdog Agent is installed and is running. Polling gives "real" event messages:

        Comments: This is normal operation

     – Watchdog Agent is installed and the Watchdog Agent is not running Polling gives the SHOW EVENTS message:

        "SNS$WATCHDOG process is not running"

     – Comments: For each poll, an entry is made in the file NETSERVER.LOG in SYS$SYSDEVICE:[SNS$WATCHDOG].

     – Watchdog Agent is not installed. Polling gives the SHOW EVENTS message:

        "Connection status: login information invalid at remote node"

     – Comments: a security intrusion occurs on the remote node for each poll. The operator log may fill with intrusion records. Use SNS$REJECT_ALWAYS to avoid this undesirable condition.

     – SNS$REJECT_ALWAYS is running (Watchdog Agent may or may not be installed). Polling gives the SHOW EVENTS message:

        "SNS$WATCHDOG process is not running"

– Comments: no intrusions, no entries in a NETSERVER.LOG. SNS$REJECT_ALWAYS must be stopped before starting SNS$WATCHDOG.EXE because SNS$REJECT_ALWAYS declares itself as the SNS$WATCHDOG DECnet object.

SNS$REJECT_ALWAYS.EXE is placed in SNS$EXAMPLES during the installation of the Watchdog Manager. It can be run to cause a polling consolidator to report "SNS$WATCHDOG process is not running" without writing entries to a NETSERVER.LOG file. SNS$REJECT_ALWAYS will not successfully start if the Watchdog Agent SNS$WATCHDOG is running. Similarly, the Watchdog Agent will not start successfully if SNS$REJECT_ALWAYS is running.

SNS$REJECT_ALWAYS.OBJ is also placed in SNS$EXAMPLES. If you wish to run SNS$REJECT_ALWAYS on another node, you can copy SNS$REJECT_ALWAYS.OBJ to the node and link with "$ LINK SNS$REJECT_ALWAYS".

Appendix E

System Watchdog API

Overview

This chapter provides guidelines for developing action routines and OpenVMS mailbox reader programs and for using the API within System Watchdog for external message notifications. Use it in conjunction with the information available throughout this guide.

Introduction

The shareable image file SNS$SHR.EXE provides the callable interface for adding and deleting external messages. The file contains the SNS$ADD_MESSAGE and SNS$DELETE_MESSAGE routines.

When you have successfully compiled, link the user programs using the following functions:

```
$ LINK USER_PROGRAM_NAME, SYS$INPUT/OPTIONS SYS$SHARE:SNS$SHR/SHARE
    ^Z
$
```

Required Privileges

Your process requires OPER, SYSPRV, or SETPRV privileges to use the SNS$ADD_MESSAGE or SNS$DELETE_MESSAGE routines. The routine formats are described in the following sections.

API Functions

This section describes the Watchdog Manager supported API functions. This section does not cover the lower-level routines that are called by these supported routines. Your programs should not have to call these lower-level routines directly.

Each routine description includes the following:

- Routine name

- Format

- Arguments

- Possible return values

The following table briefly describes the System Watchdog API functions.

Routine	Description
SNS$ADD_MESSAGE	Adds or updates an external message in the list of messages maintained by a local or remote Watchdog Agent process.
SNS$DELETE_MESSAGE	Removes one or more messages from the list of messages maintained by a local or remote Watchdog Agent process:

SNS$ADD_MESSAGE

Adds or updates an external message in the list of messages maintained by a local or remote Watchdog Agent process.

Format

SNS$ADD_MESSAGE message_text, target_node_name, transport

Arguments

message_text

OpenVMS Usage	char_string
type	character string
access	read-only
mechanism	by descriptor

The message_text parameter is the text of the message to be added or updated. The character string can contain a vertical bar (|) character specifying the search length to be used for comparison with existing messages.

target_node_name

OpenVMS Usage	char_string
type	character string
access	read-only
mechanism	by descriptor

The target_node_name parameter is the node to which the request is sent. If you leave target_node_name blank, it defaults to the node on which the call is made.

transport

OpenVMS Usage	char_string
type	character string
access	read-only
mechanism	by descriptor

The transport parameter is the network transport to use in accessing target_node_name. The valid selections are DECnet and TCPIP. If you leave transport blank, it defaults to DECnet.

Possible Return Values

OpenVMS Usage	cond_value
type	unsigned longword
access	write-only
mechanism	by value

SNS$DELETE_MESSAGE

Removes one or more messages from the list of messages maintained by a local or remote Watchdog Agent process.

Format

SNS$DELETE_MESSAGE message_text, target_node_name, transport

Arguments

message_text

OpenVMS Usage	char_string
type	character string
access	read-only
mechanism	by descriptor

The message_text parameter indicates the beginning of the message text to be removed. All external messages starting with the same character string are removed.

target_node_name

OpenVMS Usage	char_string
type	character string
access	read-only
mechanism	by descriptor

The target_node_name parameter is the node to which the request is sent. If you leave target_node_name blank, it defaults to the node on which the call is made.

transport

OpenVMS Usage	char_string
type	character string
access	read-only
mechanism	by descriptor

The transport parameter is the network transport to use in accessing target_node_name. The valid selections are DECnet and TCPIP. If you leave transport blank, it defaults to DECnet.

Possible Return Values

OpenVMS Usage	cond_value
type	unsigned longword
access	write-only
mechanism	by value

Glossary

action routine
A procedure that can be invoked by a Watchdog Manager process whenever a specified event occurs. An action routine can generate corrective actions to fix a problem flagged by the software.

class
A defined set of events with associated notification priorities.

DECtalk set
A function that can be invoked by the Watchdog Manager process whenever a specified event occurs. A DECtalk set can generate a voice message through a DTC01 or DTC03 DECtalk option.

event
A problem that the Watchdog Manager software is able to detect such as an increase in the number of CPU errors or an unreachable node.

external message
An event or message not caused by an event detected by the Watchdog Manager software but which comes from an outside user application or DCL procedure. External messages can also invoke corrective actions.

external message class
A defined set of external messages (described by their layouts)with specified notification priorities.

mailbox set
Event messages can be sent to an OpenVMS mailbox so any user, application, or tool can retrieve and process messages without affecting the action routines.

node name
For OpenVMS cluster systems, a polled node specified in the Watchdog Manager profile is a member name and never a VMScluster alias.

profile
A data file that stores all parameters used by the Watchdog Manager for monitoring systems. An empty default profile is created when the software is installed. You can create other profiles for different purposes and share the profiles among several users.

TCP/IP
Transmission Control Program/Internet Protocol. An internet communications program.

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