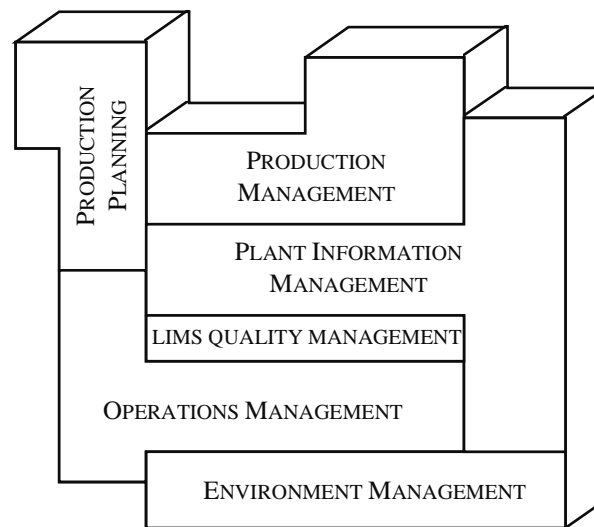


Implement PHD Event Monitoring



Lesson Objective

Objective

Given a PHD system with the Event Monitoring option installed, be able to perform the necessary configuration to detect and store events to the PHD event database, and retrieve and alarm those events.

Topics

- Capabilities of Event Monitor
- Event Monitoring Process
- Configuring Event Monitoring
- Alarm Monitoring Process
- Configuring Alarm Monitoring
- Scheduling background processing
- Overview of Event Monitor Reporting

References: *Uniformance System Environment User Guide, SM0401*
Uniformance Alarm and Event Monitoring User Guide, OM0501
Uniformance Application Server Installation Guide, SM0501
Alarm and Event Monitoring Installation (internal Honeywell document)

Event Monitoring

- The Event Monitoring application detects certain process conditions, then logs or annunciates their occurrence. The application is used by engineers to troubleshoot problems.
- Event Monitoring uses PHD Virtual Tags to encapsulate the process conditions of interest. For example:

```
if tag1 > 100 and tag2 < 50 then  
    return 1  
else  
    return 0  
endif
```

- The typical detection frequency is 10 minutes.
 - The Alarm Monitor part of the application is intended for engineer alarms, not for responsive process alarms.

Example: Provide an alarm if the cost of a blend is exceeding planned cost due to material usage.

Event Monitoring

- The Event Monitoring application detects an event based on true/false state or change in value of a PHD tag (typically a virtual tag):

State Type Event

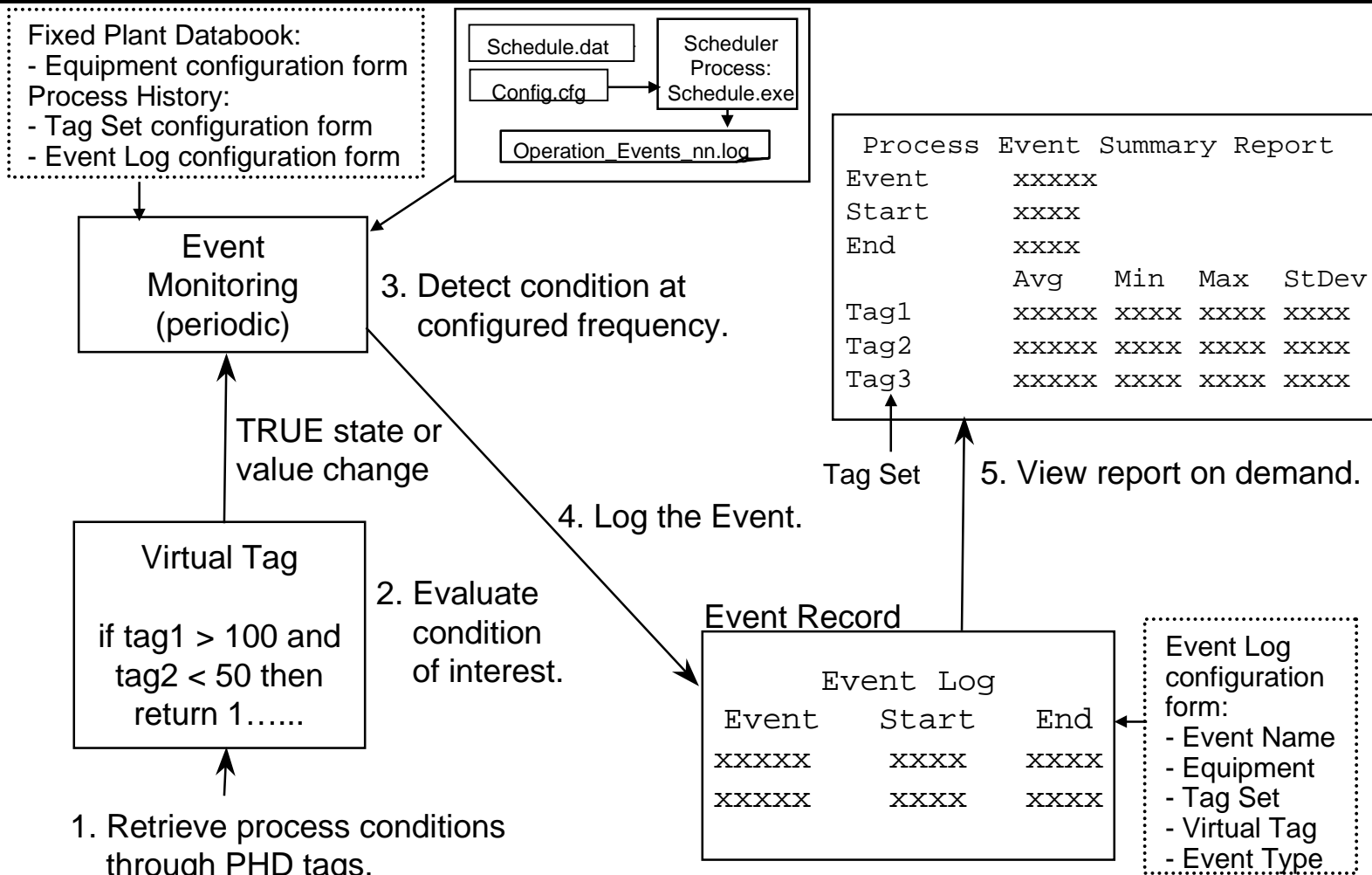
Events are intermittent, with the tag indicating ON/OFF time frames for the event. An event record is created for the time frame that the tag is TRUE (1). There is no event record for when the tag is FALSE (0).

Value Type Event

Events are continuous. The changing value of the tag indicates the change of state time frames. When the value changes, the event is ON; when it stops changing, the event is OFF. Value type events are used to monitor a process as it changes from one mode of operation to the next, creating distinct, but contiguous in time, event records for that event.

- Event Monitoring logs the start and end time of each event in an Event Log.
- You can associate a set of tags (Tag Set) with each event. The Process Event Summary Report lists the average, minimum, maximum, and standard deviation values for each tag in the Tag Set over the event time period.

Event Monitoring Process



Event and Alarm Monitoring Main Menu

TotalPlant Information - [Menu]

File Edit Records Window Help

Main Menu **TotalPlant**

Select Application

- Application Management
- Common DataBook Configuration
- Event and Alarm Monitoring**
- Multi-Language
- Process History

Select Form

- Event Log**
- =====Configuration=====
- Alarm Log Configuration
- Event Log Configuration

Select Report

- Process Event Summary

Open Help

Query/retrieve events that have been stored in the event database or enter events into the database.

Associate each event to specific equipment and a tag set.

Configure alarm annunciation for events as needed.

Query/retrieve events by equipment, tag set, event name, and/or date/time.

Event Log (Event and Alarm Monitoring)

Event Name	Event Value	Start Date and Time	End Date and Time
COKER EVENT	62.	30-May-97 02:15	30-May-97 02:15
COKER EVENT	57.	30-May-97 01:00	30-May-97 02:15
COKER EVENT	66.	08-May-97 12:00	30-May-97 01:00
COKER EVENT	59.	24-Apr-97 11:00	24-Apr-97 12:00
COKER EVENT	65.	22-Apr-97 01:22	24-Apr-97 07:00
*			

This form provides the ability to enter events that have occurred or to retrieve and monitor events that have been detected and recorded automatically by the event monitoring background process.

Reference: *Uniformance Alarm and Event Monitoring User Guide, OM0501*

Record: 1 of 5
Form View

Process Event Summary Report

TotalPlant Information - ACTPH01 - [Process Event Summary]

File Window Help

Honeywell Automation College

PROCESS EVENT SUMMARY

Event Name: TFEVENTTEST
 Equipment: RX941
 Start Date: 2/18/98 17:07

Tagname Description
 FIC21941.PV
 FVL21941.PV
 FVL22941.PV

Event Name: TFEVENTTEST
 Equipment: RX941
 Start Date: 2/18/98 17:02

Tagname Description
 FIC21941.PV
 FVL21941.PV
 FVL22941.PV

Event Name: TFEVENTTEST
 Equipment: RX941
 Start Date: 2/18/98 16:52

Description: Event Monitor for a switch-Virtual Tag=TFEVENTTAG
 Event Value: HOT
 End Date: 2/18/98 17:02
 Product:
 Event Duration (hours): 0.0

Tagname	Description	Units	Avg Value	Min Value	Max Value	Std Dev
FIC21941.PV			17.764	8.584	26.266	6.726
FVL21941.PV			000000.000	2.000	2.000	000000.000
FVL22941.PV			000000.000	49.559	000000.000	0.000

This report displays the

- quality statistics information for event equipment, and
- process condition statistics for the tag set associated with the event.

In the Event Log configuration form, you can associate a tag set with each event.

For each tag in the tag set, the Process Event Summary Report lists the average, minimum, maximum, and standard deviation values over the event time period.

Reference: *Uniformance Alarm and Event Monitoring User Guide, OM0501*

Event Log Configuration (Event and Alarm Monitoring)

TotalPlant Information - [Event Log Configuration]

File Edit Records Window Help

Event Log Configuration

Show All Records

Event	16 TO 00	Time event 16 to 00	Tagname	ZM_16_TO_00_ALM	Type	S
Equipment	BAGGING		Active?	<input checked="" type="checkbox"/>		
Tagset	STORAGE SILOS					
Event	COKER EVENT	Test Coker Event from LabChange in API	Tagname	CKRAPI	Type	V
Equipment	COKER		Active?	<input checked="" type="checkbox"/>		
Tagset	BLENDERS					
Event	TILL 1130	Time event till 11:30	Tagname	ZC_TO_1130_SW	Type	S
Equipment	BAGGING		Active?	<input checked="" type="checkbox"/>		
Tagset	MEL					
Event	TILL EIGHT	Time event till 08:00	Tagname	ZC_00_TO_08_SW	Type	S
Equipment	BAGGING		Active?	<input checked="" type="checkbox"/>		
Tagset	MEL					
*	Event		Tagname		Type	S
	Equipment		Active?	<input checked="" type="checkbox"/>		
	Tagset					

Reference: *Uniformance Alarm and Event Monitoring User Guide, OM0501*

Record: 1 of 4

Remove filter and requery underlying records

NUM OVR

Process tag
or
Virtual Tag

Identifies the event
as being created
by either a Switch
turning on or by the
change of a Value
in a tag.

Equipment Configuration (Fixed Plant Databook)

Equipment Configuration window showing a table with columns: Equipment, Description, Plant, Company, Type. The table contains one record: MIX BN4C1, Master Mix 3in * 01, , , SILO.

Attributes are listed in two panes:

- Selected Attributes: EQUIP, MIX
- Unselected Attributes: 1ST_PASS_PROCESSING, 2ND_PASS_PROCESSING, ALLOCATE, ALLOCATIONTAG, AREA, BATCH, BATCH_COUNT_FFM, BATCH_MIX, BATCH_PROCESSING, BULK, BULK_BAG_DEST, CALCULATETAG, CALC

Record: 1 of 1 (Filtered)

(Click to remove selected attribute(s) from the equipment.)

EQUIP attribute is required in order for Equipment to be included in the Equipment pulldown menu on the Event Log configuration form.

Equipment names provide a high level definition to identify functional areas or processing units in the plant environment. These are then used to answer business questions related to quality information by querying the information for a particular equipment name (ex: "crude unit", "reactor", "pelletizer", "cooling tower").

Equipment names are also used to identify logical areas of the business process to indicate vendor-supplied analytical results or laboratory control standard analytical results (ex: "vendor", "lab standard").

Reference: *Fixed Plant Databook User Guide, PIM0501*

Tag Set Configuration (Process History)

TotalPlant Information - [Tag Set Configuration]

File Edit Records Window Help

Tag Set Configuration Enter Query TotalPlant

Tagset Name	Equipment	Tagname	Seq	Tagset Type
BLENDERS	EX-4000	TAG1000	10	BATCHSET
BLENDERS	EX-4000	TAG1013	20	BATCHSET
BLENDERS	EX-4000	TAG1003	20	BATCHSET
BLENDERS	EX-4000	TAG1005	20	BATCHSET
PROCESS AREA	COKER	TAG1006	10	PERFORM
PROCESS AREA	CRUDE	TAG1010	10	PERFORM
PROCESS AREA	COKER	TAG1003	16	PERFORM
PROCESS AREA	COKER	TAG1007	20	PERFORM
PROCESS AREA	CRUDE	TAG1011	20	PERFORM
PROCESS AREA	COKER	TAG1008	30	PERFORM
PROCESS AREA	COKER	TAG1009	40	PERFORM
REACTION	RX101	TAG1000	10	PHDSET
REACTION	RX101	TAG1003	20	PHDSET
STORAGE SILOS	EX-4000	TAG1000	10	BATCHSET
STORAGE SILOS	EX-4000	TAG1001	20	BATCHSET
STORAGE SILOS	EX-4000	TAG1003	30	BATCHSET
*				

Record: 1 of 16

Enter Tagset name

NUM OVR

This form allows tags to be logically grouped into tag sets and then these sets further grouped by equipment.

"Seq" provides a means to sort the tags.

Reference: PHD User Guide, PIM0201

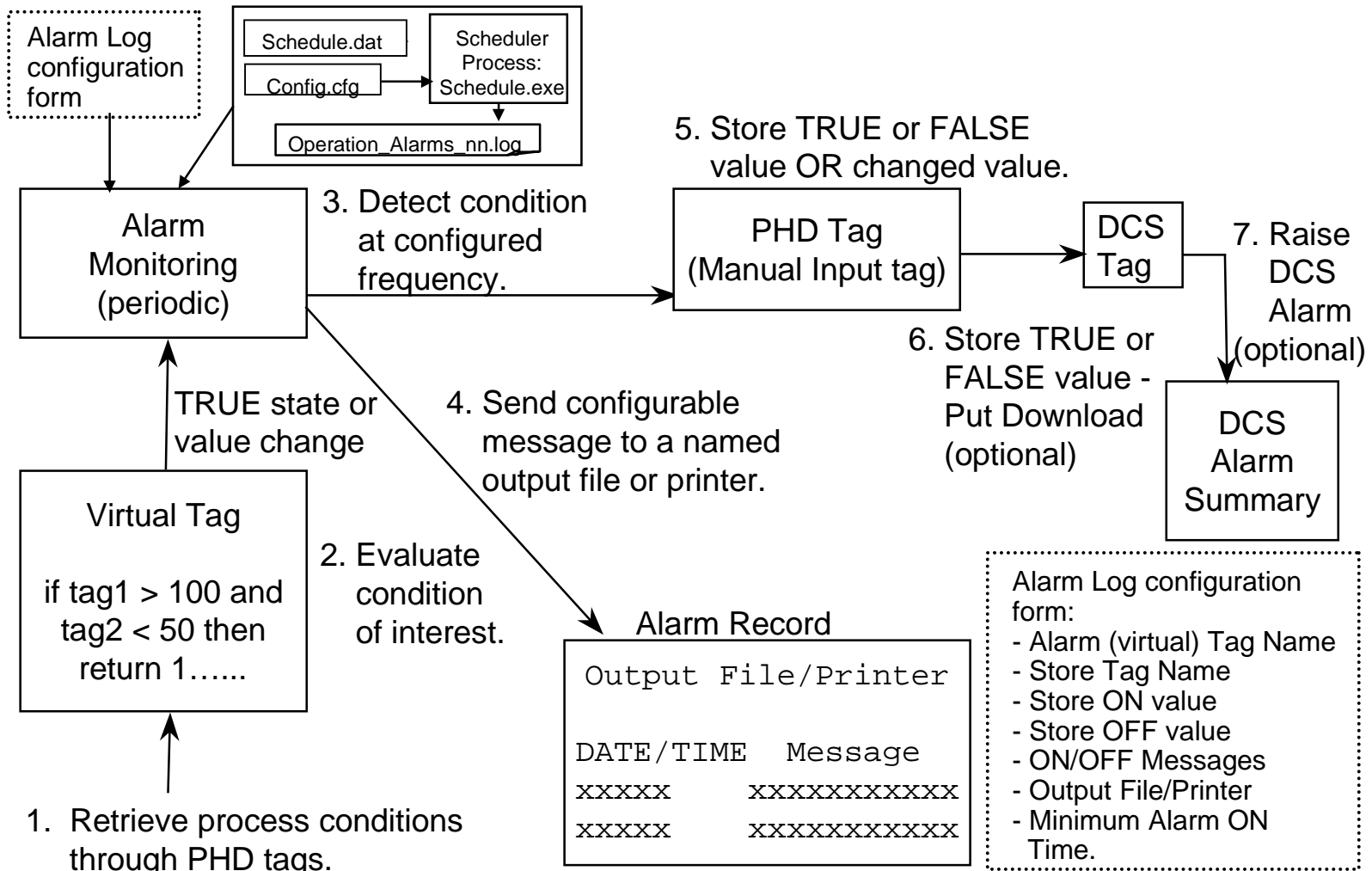
Alarm Monitoring

The objective of Alarm Monitoring is to constantly monitor production information to detect alarms and distribute alarm messages. The detection of alarms is based on monitoring logical combinations of process data collected automatically or manually entered, tank farm data, environmental data, and/or Lab data. Changes in the alarm status and the associated messages are periodically distributed to files, printers, and downloaded to specified DCS tags.

There are occasions when an alarm condition should notify the process engineers, the lab, or environmental monitoring groups. The Alarm Monitoring application, in combination with PHD and Virtual tags, allows users to define alarms and have them detected automatically. The application allows other groups, who need to know when a particular alarm condition is occurring, to have access without the need for a DCS console in their office.

- Detects event based on TRUE and FALSE state or change in value of a PHD tag (typically a virtual tag). Returned value must be an Integer data type.
- May store (put) a configured TRUE or FALSE value to a specified PHD tag:
 - PHD tag may be a Manual Input tag.
 - PHD tag *may* be configured to store (put download) to a DCS tag
 - DCS tag *may* be configured to alarm on TRUE value
 - May be used to pass status information between sub-systems (without alarming)
- Sends configurable alarm message to file or printer.

Alarm Monitoring Process



Alarm Log Configuration (Event and Alarm Monitoring)

Alarm Log Configuration

Alarm Tagname: ZC_00_TO_0610_SW Active? ☒

Store Tagname: M_00_TO_0610_ALM

Store On Value: 1 Store Off Value: 0

Store ON Message:

Store OFF Message:

Output File Name:

Alarm duration for re-send of Store Message: 3600 Print Location:

Minimum Alarm ON Time: 5

Alarm Tagname: ZC_00_TO_08_SW Active? ☒

Store Tagname: ZM_00_TO_08_ALM

Store On Value: 1 Store Off Value: 0

Store ON Message:

Store OFF Message:

Output File Name:

Alarm duration for re-send of Store Message: 3600 Print Location:

Minimum Alarm ON Time: 5

Alarm Tagname: ZC_0610_TO_1230_SW Active? ☒

Store Tagname: M_0610_TO_1230_ALM

Store On Value: 1 Store Off Value: 0

Store ON Message:

Store OFF Message:

This form configures alarms for monitoring and recording.

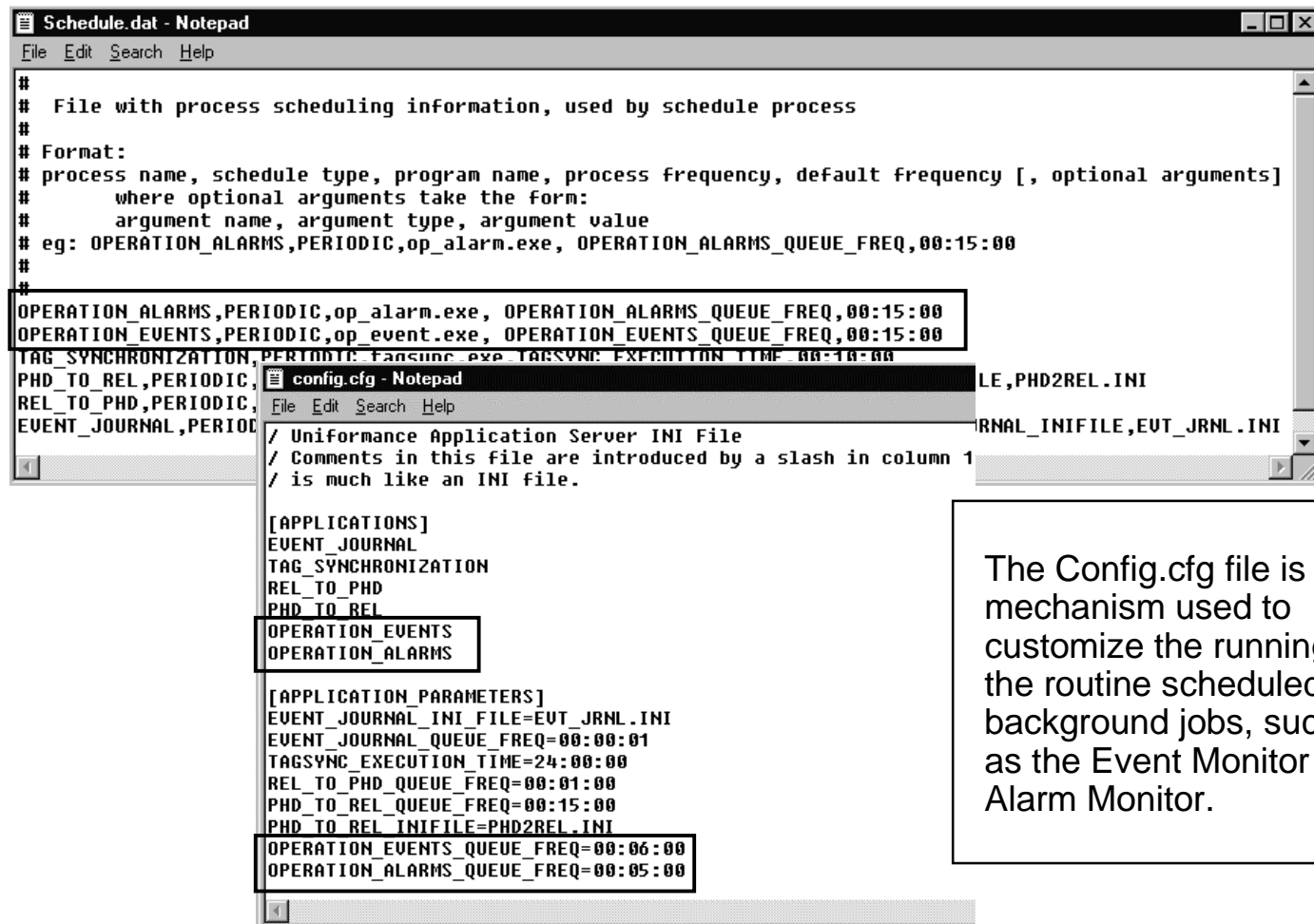
An alarm occurs when the Alarm Tagname reads '1' (On) for the minimum Alarm Time On.

Recording of these alarms occurs in any combination of the following ways: PHD store tagname, output file, or output to a printer.

If defined appropriately, the Store Tagname downloads to the DCS.

Reference: *Uniformance Alarm and Event Monitoring User Guide, OM0501*

User Configurable Frequency - Config.cfg



```
#
# File with process scheduling information, used by schedule process
#
# Format:
# process name, schedule type, program name, process frequency, default frequency [, optional arguments]
#   where optional arguments take the form:
#   argument name, argument type, argument value
# eg: OPERATION_ALARMS,PERIODIC,op_alarm.exe, OPERATION_ALARMS_QUEUE_FREQ,00:15:00
#
OPERATION_ALARMS,PERIODIC,op_alarm.exe, OPERATION_ALARMS_QUEUE_FREQ,00:15:00
OPERATION_EVENTS,PERIODIC,op_event.exe, OPERATION_EVENTS_QUEUE_FREQ,00:15:00
TAG_SYNCHRONIZATION,PERIODIC,tagsync.exe, TAGSYNC_EXECUTION_TIME,00:10:00
PHD_TO_REL,PERIODIC,PHD2REL.INI
REL_TO_PHD,PERIODIC,REL_INIFILE,EVT_JRNL.INI
EVENT_JOURNAL,PERIODIC,EVENT_JOURNAL_INIFILE,EVT_JRNL.INI

/ Uniformance Application Server INI File
/ Comments in this file are introduced by a slash in column 1
/ is much like an INI file.

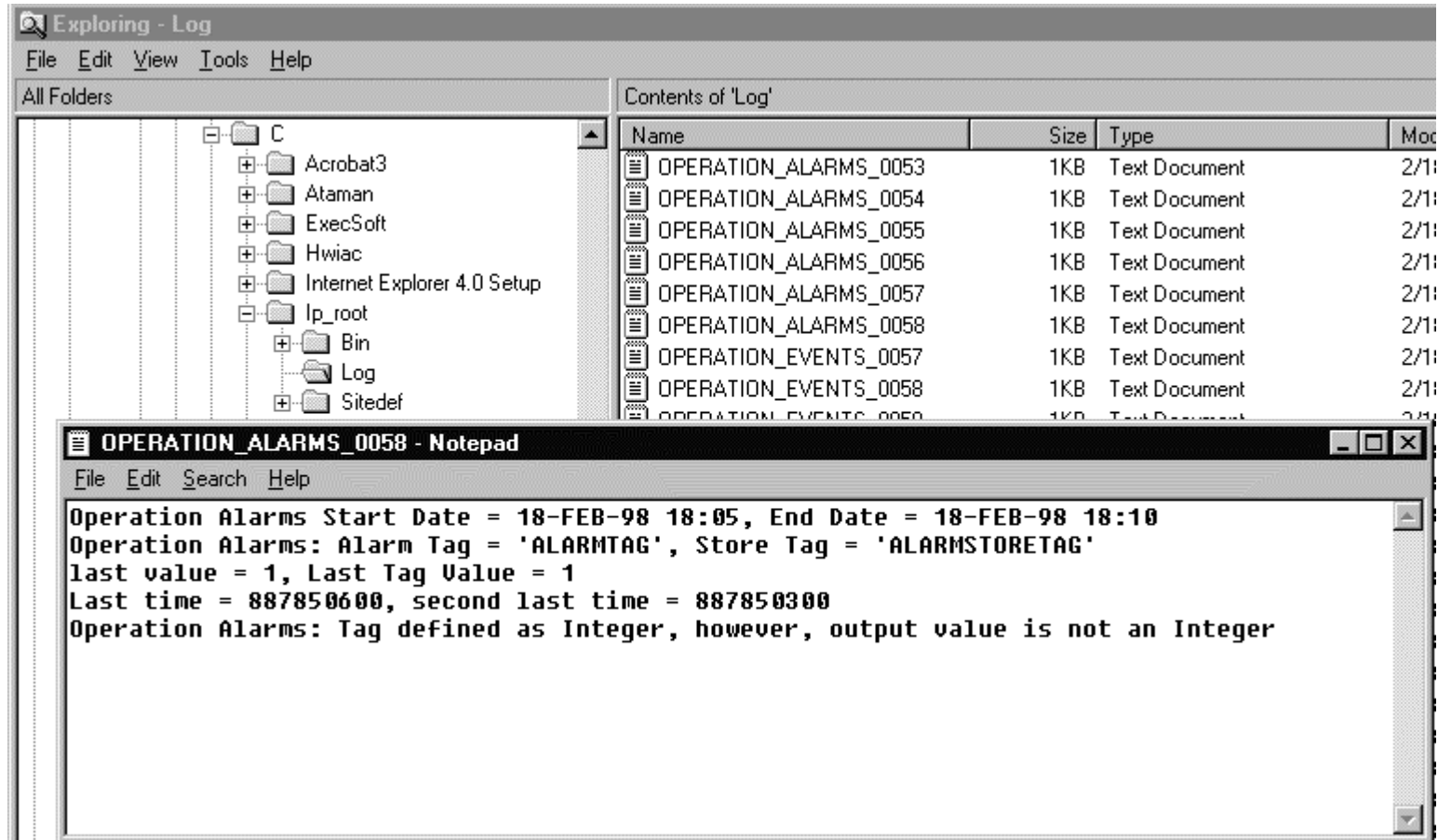
[APPLICATIONS]
EVENT_JOURNAL
TAG_SYNCHRONIZATION
REL_TO_PHD
PHD_TO_REL
OPERATION_EVENTS
OPERATION_ALARMS

[APPLICATION_PARAMETERS]
EVENT_JOURNAL_INI_FILE=EVT_JRNL.INI
EVENT_JOURNAL_QUEUE_FREQ=00:00:01
TAGSYNC_EXECUTION_TIME=24:00:00
REL_TO_PHD_QUEUE_FREQ=00:01:00
PHD_TO_REL_QUEUE_FREQ=00:15:00
PHD_TO_REL_INIFILE=PHD2REL.INI
OPERATION_EVENTS_QUEUE_FREQ=00:06:00
OPERATION_ALARMS_QUEUE_FREQ=00:05:00
```

The Config.cfg file is the mechanism used to customize the running of the routine scheduled background jobs, such as the Event Monitor and Alarm Monitor.

Reference: *Uniformance System Environment User Guide*, Application Configuration File (SM0401)

Error Messages



Hands-on Exercise

Background

These are the prebuilt tags that are available for your viewing.

Alarm Monitor:

A Virtual Tag named EA (alarm event tag) returns a value of one (1) if the sum of two PHD tags (INPUT1 and INPUT2) is greater than a specified value. The two PHD tags are Manual Input tags. The Alarm Log configuration specifies that the alarm event is to store a message to this file on the server C:\TPI\ALMLOG.TXT and also store a value to tag AMNUMERIC

Event Monitor:

A Virtual Tag named EV (value event tag) returns the current value of TIC21941.PV. The Event Log configuration specifies that the current value of TIC21941.PV is to be logged in the Event Log as event VALEVENTTEST until the value stops changing.

Event Monitor:

A Virtual Tag named ES (status event tag) returns HOT when the value of PHD tag TIC21941.PV is greater than a specified value, and COLD when it is less than a specified value. The Event Log configuration specifies that the value is to be logged in the Event Log as event TFEVENTTEST whenever it switches states.

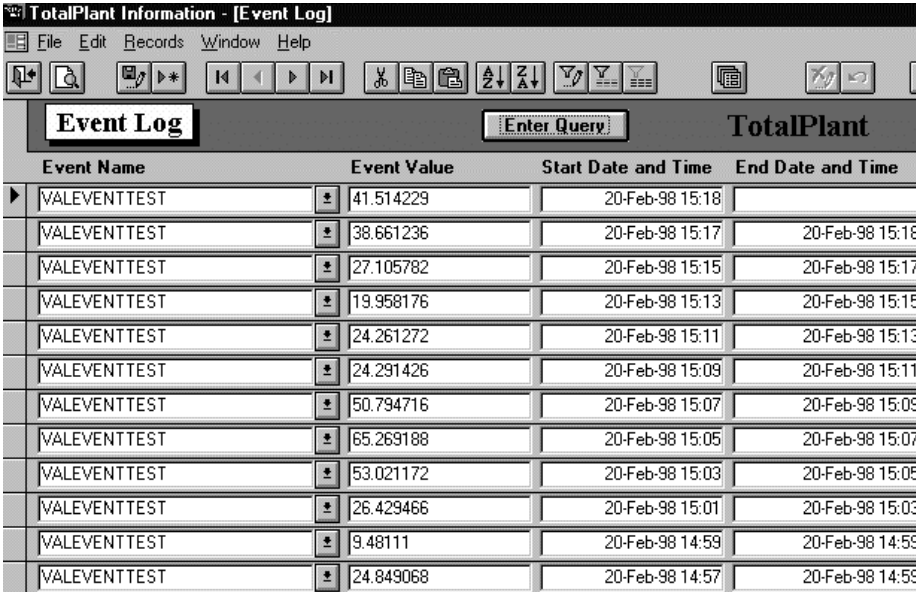
Hands-on Exercise

In this exercise, you will view the forms, logs, and related files of a preconfigured Alarm Monitor and two Event Monitors.

Event Monitor

1. Go to the Event and Alarm Monitor application and query the Event Log for events named VALEVENTTEST.

What type of event is being logged? VALUE or SWITCH

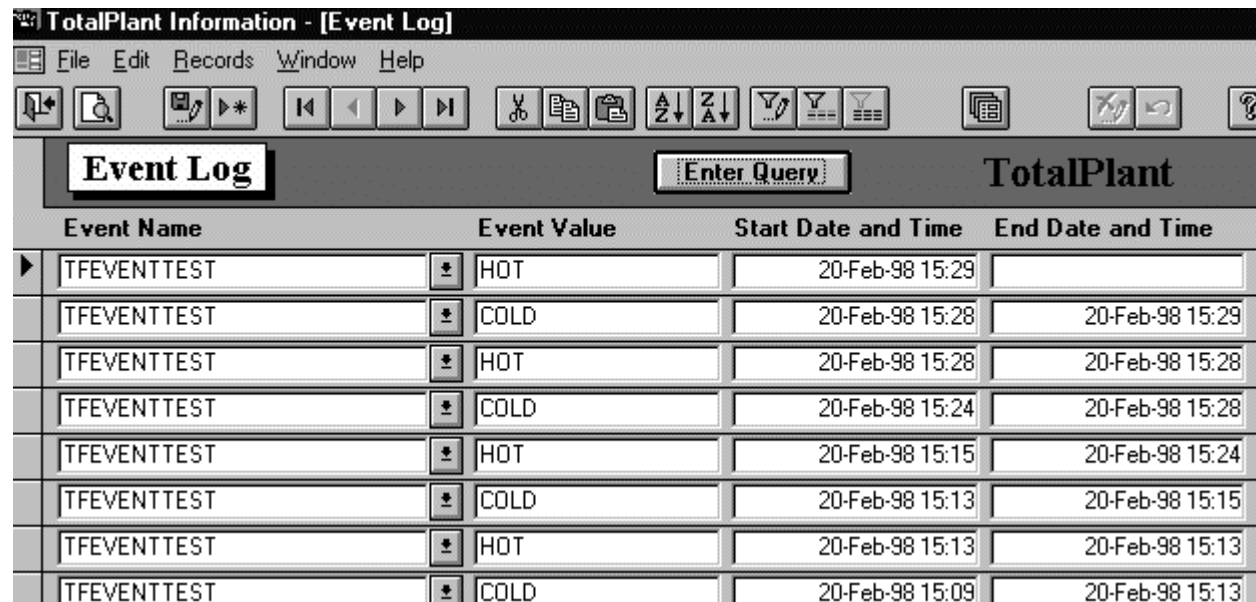


Event Name	Event Value	Start Date and Time	End Date and Time
VALEVENTTEST	41.514229	20-Feb-98 15:18	
VALEVENTTEST	38.661236	20-Feb-98 15:17	20-Feb-98 15:18
VALEVENTTEST	27.105782	20-Feb-98 15:15	20-Feb-98 15:17
VALEVENTTEST	19.958176	20-Feb-98 15:13	20-Feb-98 15:15
VALEVENTTEST	24.261272	20-Feb-98 15:11	20-Feb-98 15:13
VALEVENTTEST	24.291426	20-Feb-98 15:09	20-Feb-98 15:11
VALEVENTTEST	50.794716	20-Feb-98 15:07	20-Feb-98 15:09
VALEVENTTEST	65.269188	20-Feb-98 15:05	20-Feb-98 15:07
VALEVENTTEST	53.021172	20-Feb-98 15:03	20-Feb-98 15:05
VALEVENTTEST	26.429466	20-Feb-98 15:01	20-Feb-98 15:03
VALEVENTTEST	9.48111	20-Feb-98 14:59	20-Feb-98 14:59
VALEVENTTEST	24.849068	20-Feb-98 14:57	20-Feb-98 14:59

Hands-on Exercise, *continued*

2. Query the Event Log for events named TFEVENTTEST.

What type of event is being logged? VALUE or SWITCH



Event Name	Event Value	Start Date and Time	End Date and Time
TFEVENTTEST	HOT	20-Feb-98 15:29	
TFEVENTTEST	COLD	20-Feb-98 15:28	20-Feb-98 15:29
TFEVENTTEST	HOT	20-Feb-98 15:28	20-Feb-98 15:28
TFEVENTTEST	COLD	20-Feb-98 15:24	20-Feb-98 15:28
TFEVENTTEST	HOT	20-Feb-98 15:15	20-Feb-98 15:24
TFEVENTTEST	COLD	20-Feb-98 15:13	20-Feb-98 15:15
TFEVENTTEST	HOT	20-Feb-98 15:13	20-Feb-98 15:13
TFEVENTTEST	COLD	20-Feb-98 15:09	20-Feb-98 15:13

Hands-on Exercise, *continued*

- Look at the Event Log Configuration for both events (Query *TEST).
(Each entry on the form is defined in the *Alarm and Event Monitoring User Guide*.)

What tag is being monitored for event TFEVENTTEST? _____

For event VALEVENTTEST? _____

What is the name of the Tag Set for the events? _____

TotalPlant Information - [Event Log Configuration]					
Event Log Configuration					
Event	TFEVENTTEST	Event Monitor for a switch-Virtual Tag=TFEVENTTAG			
Equipment	RX941	Tagname	ES	Type	S
Tagset	REACTOR INLET FLOWS	Active?	<input checked="" type="checkbox"/>		
Event	VALEVENTTEST	Event Monitor for a changing value-Virtual Tag=VALEVENTTA			
Equipment	RX941	Tagname	EV	Type	V
Tagset	REACTOR INLET FLOWS	Active?	<input checked="" type="checkbox"/>		
*	Event				
	Equipment	Tagname		Type	S
	Tagset	Active?	<input checked="" type="checkbox"/>		

Hands-on Exercise, *continued*

4. View the Process Event Summary Report for today (ex. Start Date Feb 18, 1998).

What tags are reported when the event TFEVENTTEST is detected?

5. What is frequency of the Event Monitor on this system?

(Hint: Look at the config.cfg file.)_____

Hands-on Exercise, *continued*

Alarm Monitor

1. Return to the Main Menu for the Event and Alarm Monitor, and view the Alarm Log Configuration.

What is the name of the tag being monitored by the Alarm Monitor application? _____

2. Where are the alarm messages being sent? (file or printer) _____

3. Is a value being stored to another tag when the alarm event occurs?

If yes, what value is being stored? _____

TotalPlant Information - [Alarm Log Configuration]

File Edit Records Window Help

Alarm Log Configuration Enter Query TotalPlant

Alarm Tagname EA Active? ☒

Store Tagname AMNUMERIC

Store On Value 111 Store Off Value 000

Store ON Message Input 1 and Input 2 exceed 25.

Store OFF Message Input 1 and Input 2 are less than 25.

Output File Name c:\TPI\ALMLOG.TXT

Alarm duration for re-send of Store Message 120 Print Location

Minimum Alarm ON Time 10

Hands-on Exercise, *continued*

4. Is a value being downloaded to the DCS when the alarm event occurs? (Hint: Look at the tag configuration of the “store tag.”)
5. If you haven’t already, look at the contents of the file specified in the Alarm Log configuration (the file is located on the server).

Hands-on Exercise, *continued*

Event Monitor Configuration Exercise - Optional

1. Build a Manual Input tag (Gnn.INPUT) to use to “drive” events.
2. Configure a Virtual Tag (Gnn.VEVENT) to return HELLO when the Manual Input tag is at a certain value.
3. Add your own Equipment to the Common Plant Databook (GnnEQUIPMENT). Remember that you have to specify the EQUIP attribute also.
4. Create a Tag Set containing several tags you built previously during the training.
Tag Set = GnnEVENTTAGSET
5. Configure the Event Log:
Event Name = GnnEVENTNAME
Equipment = (your choice)
6. Use the PHDMAN> PUT function to drive the value of your Manual Input tag and create an event.
7. Check the log to see if any error messages were generated.

Hands-on Exercise, *continued*

Event Monitor Configuration Exercise - Optional , *continued*

8. View the Event Log for the past hour for your Event Name. If the event is not present, ask your instructor for assistance.
9. View the Process Event Summary Report for all of the student events (G*).
10. Delete one of the events from your Event Log.

Hands-on Exercise, *continued*

Alarm Monitor Configuration Exercise - Optional

1. Configure a Virtual Tag (GnnVALARM) to return an alarm when your Manual Input tag is greater than a certain amount.
2. Create a Manual Input tag (GnnALMPUT) to store (Put Download) the value to a DCS tag (AMNUMERICnn).
3. Configure the Alarm Log to store the alarm value to the DCS tag.
Also configure the Alarm Log to store a message of your choice to the file C:/TEMP/GnnALM.TXT.
4. Cause the alarm condition and check that there are no error messages in the IP_ROOT log.
5. Verify that the value is put to the DCS tag and stored to the output file. If the alarm did not occur, ask your instructor for assistance.

END OF EXERCISE

Overview of Event Monitoring

- **Application Functionality**
 - Continuously monitors process information (background process)
 - Detects logical combinations of manually entered, process, and Lab data
 - Logs start/end times and dates of events
 - Reports process values for event occurrences over any time range

- **Configuration**
 - Equipment Configuration
 - Virtual Tag configuration
 - Tag Set Configuration
 - Event Log Configuration

- **System Setup**
 - Background process execution options
 - Security - User access to configuration screens, Event Log screen, and Process Event Summary Report.

Overview of Event Monitoring, *continued*

- **Application Use and Opportunities**
 - Used to log production run changes
 - detecting changes in finished products
 - detecting changes in mode of operation
 - Monitoring and logging 'personal' events / situations of interest
 - Correlation of any Lab test results with process data
 - Monitor complex relationships in data
 - Support for complex mathematical operations
 - Use of time offsets in virtual tag logic
 - Include 'events' in process monitoring displays

Overview of Event Monitoring, *continued*

- **Event Log Configuration**

- Events are named and include description / comment
- Events are related to equipment (for reporting)
 - Equipment attribute 'EQUIP' required
- Events are related to a Tagset (optional, list of values)
- Events are detected based on identified PHD tag (process or virtual)
 - By change in value - Type = V (record each change in value)
 - By change in state - Type = S (record event only when tag value is 1)
- Activate / deactivate instead of delete

- **Tag Set Configuration**

- Any number of named custom lists of tags
- Related to equipment
- Any number of tagnames (process or virtual), sequenced within list
- Tag Set type is required (configured from LookUp table as 'TSETTYPE')

Overview of Event Monitoring, *continued*

- **Event Monitoring Background Process**
 - Configured to execute on user configurable frequency
 - Evaluates each active Event Log Configuration entry
 - Gets last Event Log entry (occurring if no end date)
 - Gets all events for each tag since last execution
 - Creates or updates Event Log entries as required
 - Internally logs execution time
 - Handles system outages without lost events
 - A log file in the root directory contains any errors/messages.

Overview of Event Monitoring, *continued*

- **Process Event Summary Report**
 - Report of selected events and process summary statistics (for tags in Tag Set)
 - Selectable by
 - Start / stop date & time range
 - Event name
 - Equipment
 - Tag Set name can be changed retroactively (event log configuration)
 - Tag Set can be modified retroactively (Tag Set configuration)
- **Accessing Logged Event (Event Log)**
 - Query events by name
 - Events are returned in reverse chronological order
 - Events can be manually inserted, deleted, updated
 - must be for a valid event name in Event Log Configuration
 - Value of tag during event is recorded

Overview of Alarm Monitoring

- **Application Functionality**
 - Continuously monitors process information (background process). Configured to execute on a user configurable frequency. Internally logs execution time. Handles system outages without lost alarms. A log file in the root directory contains any errors/messages.
 - Evaluates each active Alarm Monitoring configuration entry. Detects logical combinations of manually entered, process and Lab data. Gets all alarms for each tag since last execution
 - Logs detected alarm conditions to printers, files, and/or downloads them to DCS tags.
 - Each Alarm Monitoring record contains the following:
 - Tag to be monitored
 - DCS store tag
 - Values to be sent to DCS tag
 - File/printer message
 - Resend message frequency
 - Output file name/printer name
- **Configuration**
 - Alarm Log Configuration
 - Alarm Monitoring requires that the Alarm tag return only 0 (normal) or 1 (alarm). Fulfilling this requirement will normally require the use of Virtual Tags.
- **System Setup**
 - Background process execution options
 - User access to configuration screens and Alarm Log screen

Overview of Alarm Monitoring, *continued*

- **Application Use and Opportunities**
 - Monitor/detect/report relationships in process data when a set of conditions occurs
 - Alert operations/management personnel as soon as possible after event is detected
 - Initiate remedial action steps as soon as possible
 - Integration of Lab quality test results with process data for event detection
 - Integration of manually entered information for event detection
 - Periodic reminder of event occurrence
 - Include alarm occurrences in supervisory/management summary reports for followup

Summary of Implementation

- The typical objective for Event and Alarm Monitoring is to detect a certain set of process conditions that indicate a potential future problem, and notify operations for preventive action.
 - Example: Conditions indicating heat exchanger fouling
- It may be appropriate to use Alarm Monitoring to generate a DCS alarm, but you need to validate the conditions to be monitored to avoid spurious alarms.
- Implementation Methodology
 - First, define a tag that evaluates the conditions of interest.
 - Test the tag against historical data to validate that it adequately predicts the incipient problem.
 - Configure Event Monitoring to monitor the tag value.
 - Validate that the appropriate messages are being logged when the situation recurs.
 - Configure Alarm Monitoring to raise an audible alarm when the situation recurs.
 - The CONFIG.CFG file is the mechanism to customize the running of the routine scheduled background jobs, such as Event and Alarm Monitoring.

References:

Uniformance Alarm and Event Monitoring User Guide
Uniformance System Environment User Guide

Honeywell

Helping You Manage Your World