Microsoft System Center Operations Manager 2012
Monitoring Devices with SysLog

Version: 1.0

Updated: 6/19/2012

Writer: Dave Murphy

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Table of Contents

Document Overview Information

This document contanins step-by-step instructions on how to monitor devices via SysLog alerting through Microsoft System Center Operations Manager 2012. The purpose of the document is to fully setup and test SysLog alerting for your network or server devices. This document will be periodically updated with methods to enable syslogging on systems such as VMWare, F5 and other devices.

Presumptions

This document presumes the user already has a number of devices discovered within System Center. If feedback requests that the document cover how to add an SNMP device or network equipment, then that may eventually be included.

References

The following sources provided valuable information for this whitepaper:

- http://blogs.technet.com/b/cliveeastwood/archive/2007/09/07/generating-alerts-from-unix-linux-syslog-messages-in-operations-manager-2007.aspx
- http://ianblythmanagement.wordpress.com/2007/05/25/syslog/
- http://en.wikipedia.org/wiki/Syslog

Jumping In

Essentially, when setting up SysLogging for Operations Manager, you are setting up a global monitoring parameter, meaning a single rule will alert for multiple devices. You could create groups and add some custom information to get more granular with the alerts, such as whether the alerts were coming from a network device, server, VMWare environment or Windows. We'll explore that further in future document versions. For now, the document presumes you want to get SysLogging up as quickly as possible to interface with as many devices as possible.

SCOM SysLog Variables

As mentioned in Clive Eastwoods blog posting, there are a number of variables that you can add to the alerts to help identify the source. These variables are as follows:

$Data/EventData/DataItem/Facility$
$Data/EventData/DataItem/Severity$
$Data/EventData/DataItem/Priority$
$Data/EventData/DataItem/PriorityName$
$Data/EventData/DataItem/TimeStamp$
$Data/EventData/DataItem/HostName$
$Data/EventData/DataItem/Message$

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SysLog Facility names

Syslog categorizes alerts from various system components through facility names. These facility names generally correspond to the operating level of the system component, zero or zero ring being the kernel in most systems and then moving up the chain from there. Enclosed is a full table of the SysLog Facility names:

Facility Number	Facility Description
0	kernel messages
1	user-level messages
2	mail system
3	system daemons
4	security/authorization messages
5	messages generated internally by syslogd
6	line printer subsystem
7	network news subsystem
8	UUCP subsystem
9	clock daemon
10	security/authorization messages
11	FTP daemon
12	NTP subsystem
13	log audit
14	log alert
15	clock daemon
16	local use 0 (local0)
17	local use 1 (local1)
18	local use 2 (local2)
19	local use 3 (local3)
20	local use 4 (local4)
21	local use 5 (local5)
22	local use 6 (local6)
23	local use 7 (local7)

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Facility Number Facility Description 0 kernel messages 1 user-level messages 2 mail system 3 system daemons 4 security/authorization messages 5 messages generated internally by syslogd 6 line printer subsystem 7 network news subsystem 8 UUCP subsystem 9 clock daemon 10 security/authorization messages 11 FTP daemon 12 NTP subsystem 13 log audit 14 log alert 15 clock daemon 16 local use 0 (local0) 17 local use 1 (local1) 18 local use 2 (local2) 19 local use 3 (local3) 20 local use 4 (local4) 21 local use 5 (local5) 22 local use 6 (local6) 23 local use 7 (local7)

SysLog Severity Levels

In addition to monitoring which system area is generating the alert, the SysLog service will assign a criticality to the alert. These can be used to setup additional rules and views within SCOM, which will be covered in another section. The severity levels are described as follows (source wikipedia.org - http://en.wikipedia.org/wiki/Syslog):

Code	Severity	Description	General Description
0	Emergency	System is unusable.	A "panic" condition usually affecting multiple apps/servers/sites. At this level it would usually notify all tech staff on call.
1	Alert	Action must be taken immediately.	Should be corrected immediately, therefore notify staff who can fix the problem. An example would be the loss of a backup ISP connection.
2	Critical	Critical conditions.	Should be corrected immediately, but indicates failure in a primary system, an example is a loss of primary ISP connection.
3	Error	Error conditions.	Non-urgent failures, these should be relayed to developers or admins; each item must be resolved within a given time.
4	Warning	Warning conditions.	Warning messages, not an error, but indication that an error will occur if action is not taken, e.g. file system 85% full - each item must be resolved within a given time.
5	Notice	Normal but significant condition.	Events that are unusual but not error conditions - might be summarized in an email to developers or admins to spot potential problems - no immediate action required.
6	Informational	Informational messages.	Normal operational messages - may be harvested for reporting, measuring throughput, etc. - no action required.
7	Debug	Debug-level messages.	Info useful to developers for debugging the application, not useful during operations.

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3 Error Error conditions.

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4 Warning Warning conditions.

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Events that are unusual but not error conditions - might be summarized in an email to developers or admins to spot potential problems - no immediate action required.

6 Informational

Normal but significant condition.

Informational Normal messages.

operational messages - may be harvested for reporting, measuring throughput, etc. - no action required.

7 Debug Debug-level messages.

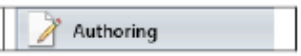
Info useful to developers for debugging the application, not useful during operations.

Setup SysLog Alerts

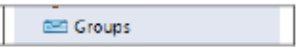
Now that we have the variables for the alerts along with the system facilities and severity levels to use, we can jump in to setup SysLogging!

Some quick background, if you want to use custom device groups for controlling your syslog alerts, the management pack that has the group will have to be used for setting up the alert rules as well. For this reason, I suggest setting up a management pack for syslog rules and monitors as well as device groups. This ensures you will be able to select those groups during the rule setup. Otherwise, groups outside of the management pack that are in unsealed management packs (i.e. ones that you have created already) will not be available.

1. Open the Operations Manager Management Console
2. Select Authoring

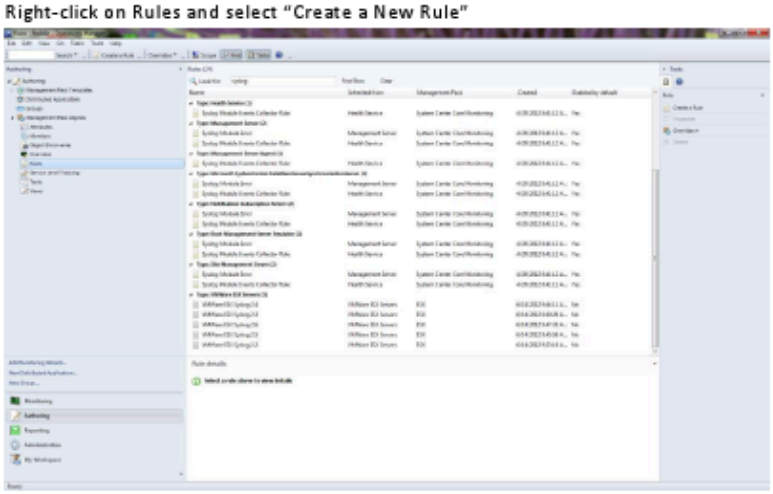


3. Select "Groups" and then "Create a New Group"



   a. For the group name, put in something such as "SysLog Devices"
   b. When selecting your management pack, I suggest creating a new management pack dedicated to syslog, label the management pack SysLog Monitoring or something to that effect so you know it has to do with the SysLog services.
   c. For explicit members, add the SNMP devices or Windows Hosts you might want to process.

4. Right-click on Rules and select "Create a New Rule"



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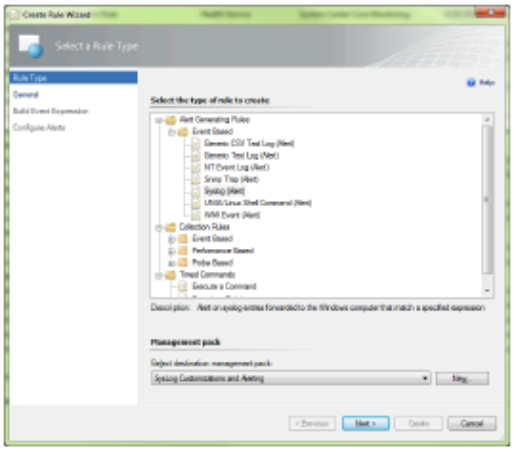
Select Authoring

Select “Groups” and then “Create a New Group”

“Select a Rule Type”

5. Select “Event Based” under the “Alert Generating Rules” and then select “Syslog (Alert)”. Select the management pack you setup earlier for SysLog alerts and groups.

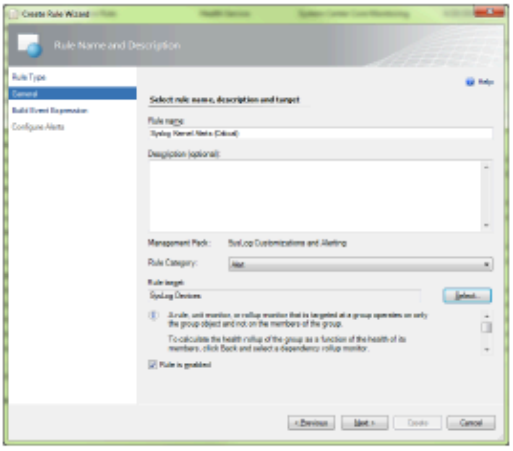


“Rule Name and Description”

6. We will label this rule name as “Syslog Kernel Alerts (Critical)”

7. Rule category will be “Alert”

8. For the “Rule Target”, select the group you setup for syslog devices.



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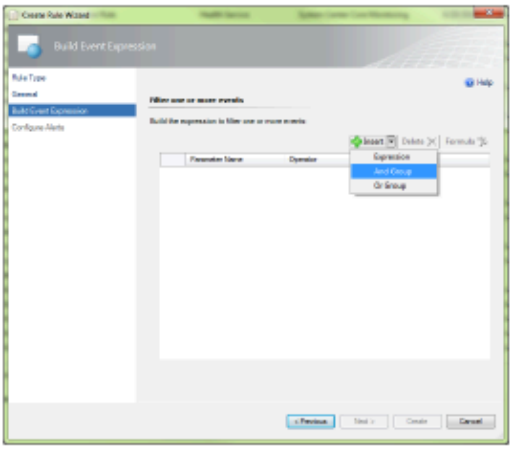
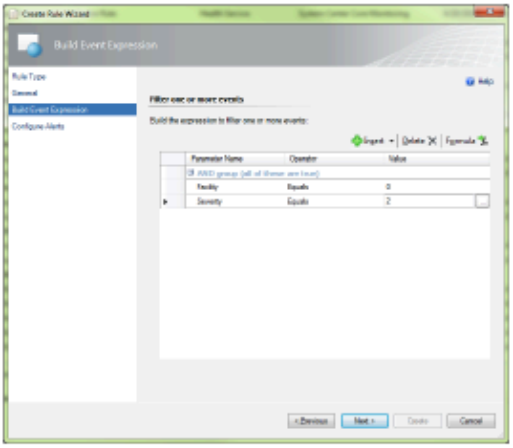
“Build Event Expression”

9. In the “Build Event Expression” screen, select the “Insert” dropdown and select an “And Group”



10. In the first field, under “Parameter Name” type in “Facility” (Without the quotes), “Operator” should be “Equals” and the “Value” should be “0” (zero)
11. Simple hit “Insert” to add another row. Under the “Parameter Name” type in “Severity”, “Operator” should be “Equals” and the “Value” should be “2”



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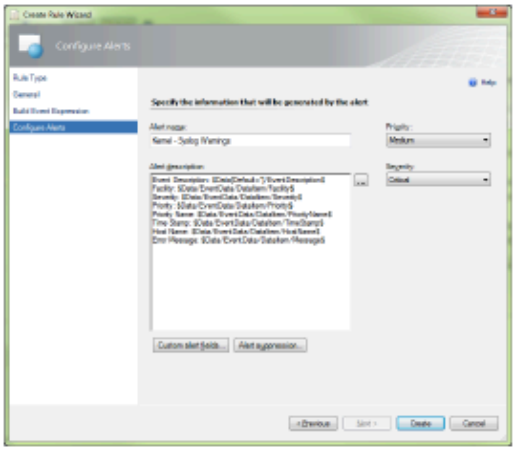
“Configure Alerts”

12. On the “Configure Alerts” screen, you can alert the fields you want to include. I typically include all the variables allowed. If you were grouping devices, you could also include a descriptor here to show what the group was, such as routers, switches, servers, etc. Enclosed are the variables we use.

Event Description: $Data[Default=”]/EventDescription$
Facility: $Data/EventData/DataItem/Facility/$
Severity: $Data/EventData/DataItem/Severity/$
Priority: $Data/EventData/DataItem/Priority/$
Priority Name: $Data/EventData/DataItem/PriorityName$
Time Stamp: $Data/EventData/DataItem/TimeStamp$
Host Name: $Data/EventData/DataItem/HostName$
Error Message: $Data/EventData/DataItem/Message$



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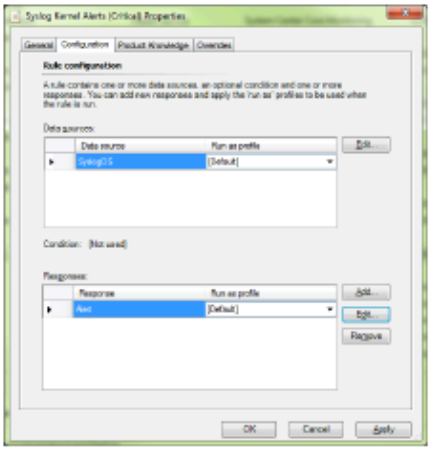
Post Creation Edits

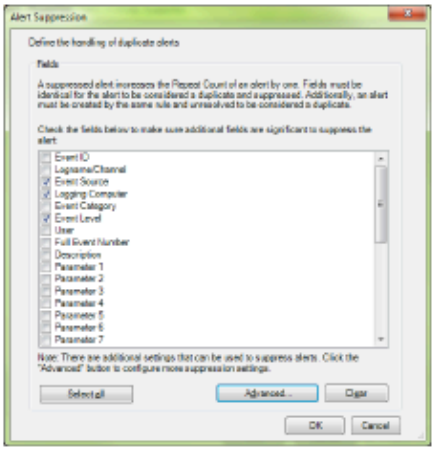
Once the alert has been created, you may want to go back to the alert and configure the suppression fields, this way, a repeating alert from a system won't flood your monitoring dashboard.

a. To do this, go to the Rules section and double-click on your new alert.

b. Select the "Configuration" tab and then "Edit" under the "Responses" section.



c. On the next screen, select the "Alert Suppression"



d. You can play around with the options here. The ones checked in this example usually work well to start.

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