NiCE Log File MP

Using the NiCE Log File MP to create Alert Rules with Regular Expressions

for use with System Center Operations Manager

Whitepaper
NiCE LogFile Management Pack
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NiCE
IT Management Solutions

Contents

Purpose of this Document

This document describes a use case scenario for the NiCE Log File MP, highlighting how to create alerting rules that use regular expression for pattern matching entries in a log file.

The NiCE Log File MP Whitepaper provides useful information in addition to the Log File MP Quick Start Guide, without replacing it or parts of it. It should be seen as a supplement to better understand and use the Log File MP features.

Overview

The NiCE Log File Management Pack monitors log files on the Windows platform and alerts based on matching patterns. The MP has numerous built-in wizards that help user create rules/monitors that read the log file entries. This paper walks you through how to create a simple alert rule that uses regular expressions. The paper gives examples for some of the regular expression concepts that can be used for pattern matching.

Use Case Scenario

The user wants to read log file entries and trigger an alert based on a matching pattern in a log file.

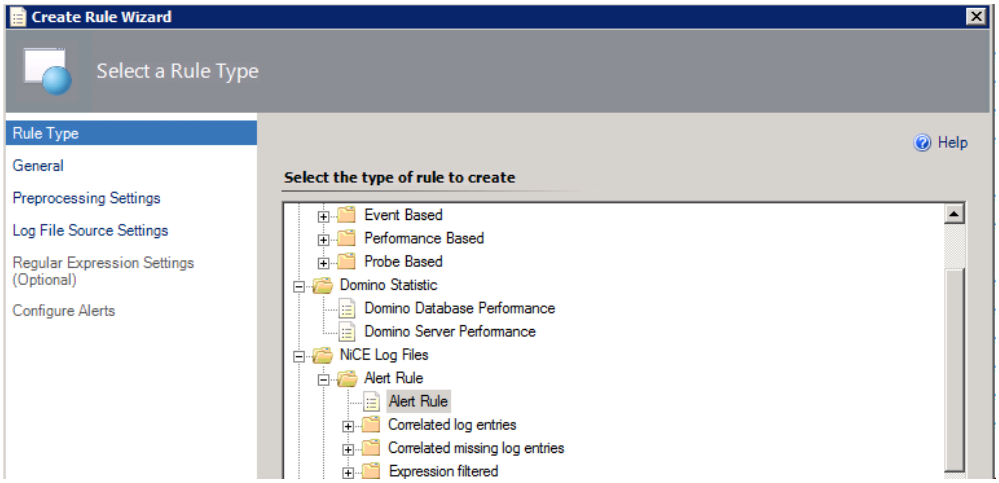
In this example, the rule is reading a csv file which has data of the following format
Message Type,Timestamp,QVW,Path,Error Code,Error,Log File,Log File Time

A typical line that matches the above the format will be something like this
FAIL,07/04/2016 17:36,SampleData,c:\myproject\data,3,General ODBC error (Script Error=3),QlikViewError.log,07/04/2016 17:35

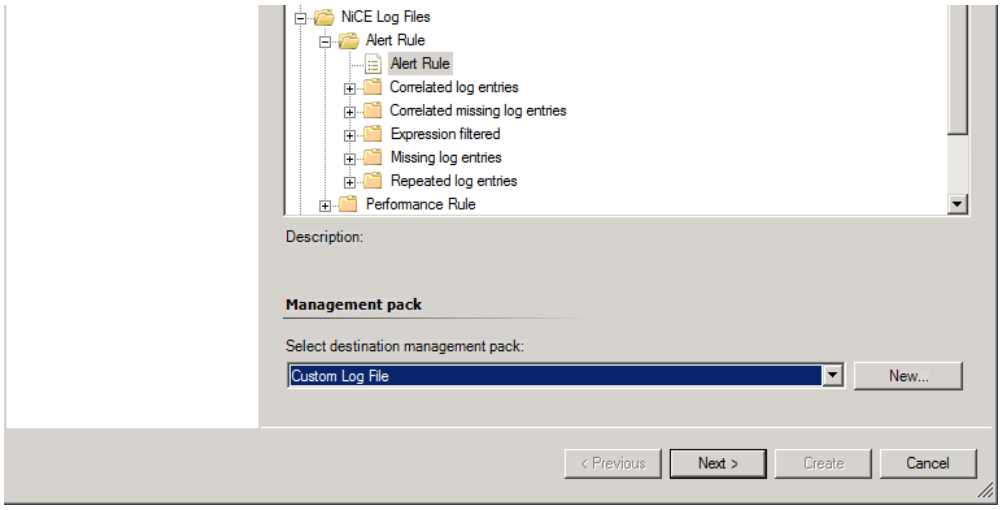
The user wants to create an alert if a log line matches this pattern and some of the details in the log line should be included in the alert so the SCOM user can get the relevant details.

Steps to setup an Example ALERT rule

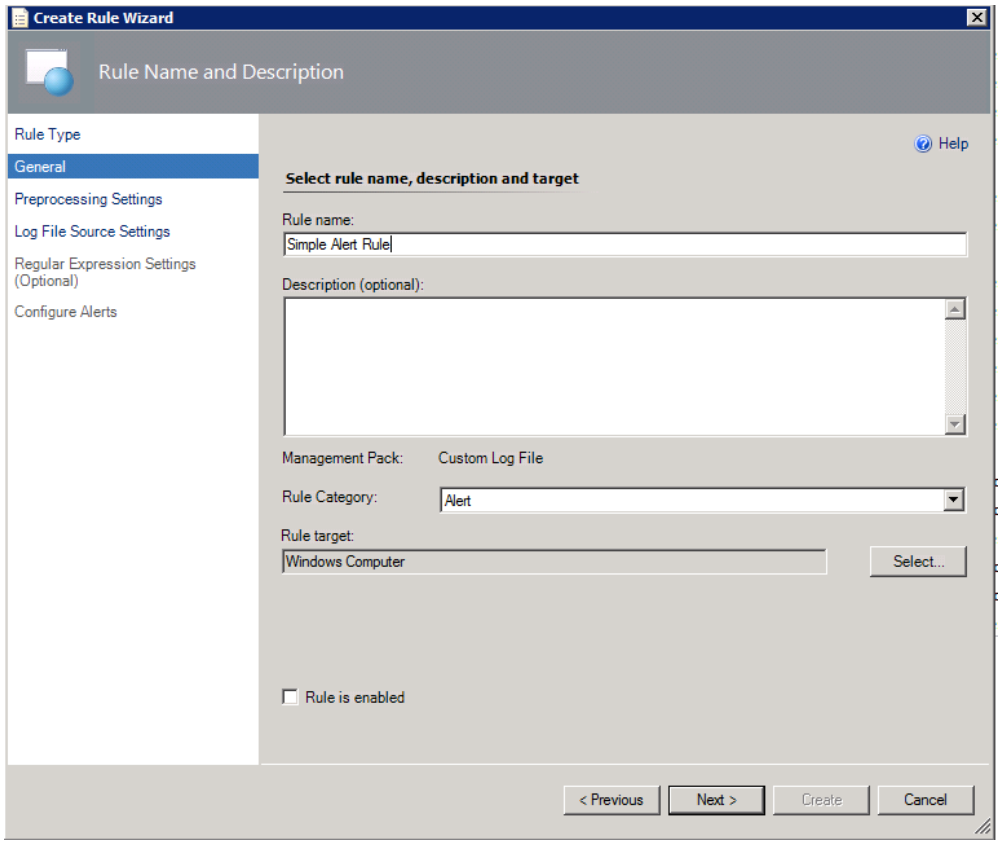
1.) Create a new rule in the SCOM Console and select the **Alert Rule** type as seen below.



2.) Select an existing or generate a new Management Pack where the rule is going to be saved.

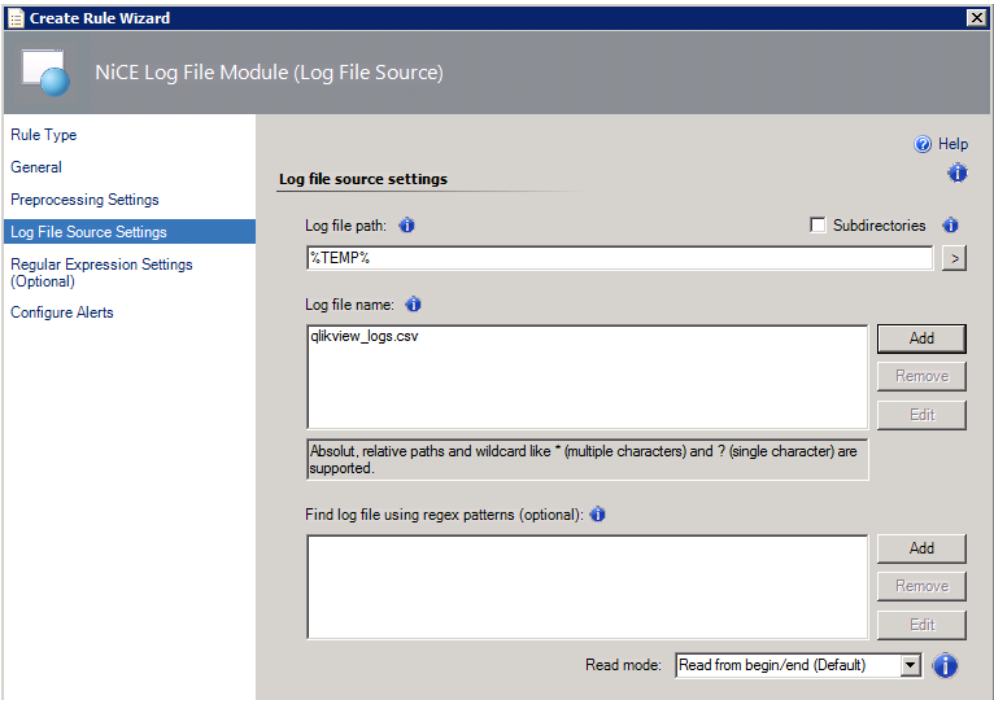


3.) Navigate through the **General** page and specify the Rule name and the Rule target values. Ideally, set the rule to be disabled and you can override it to the specific node/group.



4.) Navigate through the **Log File Source Settings** page and define the log file details. You can specify the log file path either with absolute values or using environment variables as shown below. Note that the environment variables are dependent on the user who is going to run this rule (Action Account). You can specify the log file name also either with the actual log file or wildcards.

By default, the rule is going to read the log file from the beginning the first time it runs and then from that point on it will read any new entries. You can see more details in the Log File MP Quick Start Guide about **Read Mode**.



5.) On the **Regular Expression Settings** page, define the pattern matching that will be used to identify if a line is going to be read from the log file.

In the example defined earlier, the rule is looking for entries like this
FAIL,07/04/2016 17:36,SampleData,c:\myproject\data,3,General ODBC error (Script Error=3),QlikViewError.log,07/04/2016 17:35

The data in this line maps to following as stated in the User Requirement
Message Type,Timestamp,QVW,Path,Error Code,Error,Log File,Log File Time

The following regular expression will match the log line and will map the specific data to a variable so it can be used later on via XPath.
(?<MsgType>\w+),(?<MsgTime>[0-9/ :]*),(?<WorkSheet>\w+),(?<Path>[A-z:\\]*),(?<ErrCode>\d+),(?<Text>[A-z ()=0-9]*),*

In this regular expression four different elements of regular expression are used as shown in the color coded value.

- **(?<MsgType>\w+)** -> This matches any group of word characters and maps the data to a variable called MsgType. So in this example it will map the first word "FAIL" in the line to this variable.

- **(?<MsgTime>[0-9/:]*)** -> This matches any group of characters that are numbers, /, : and " " (blank space) in them and map this data to a variable called MsgTime. So in this example it will map the time value "07/04/2016 17:36" in the line to this variable.

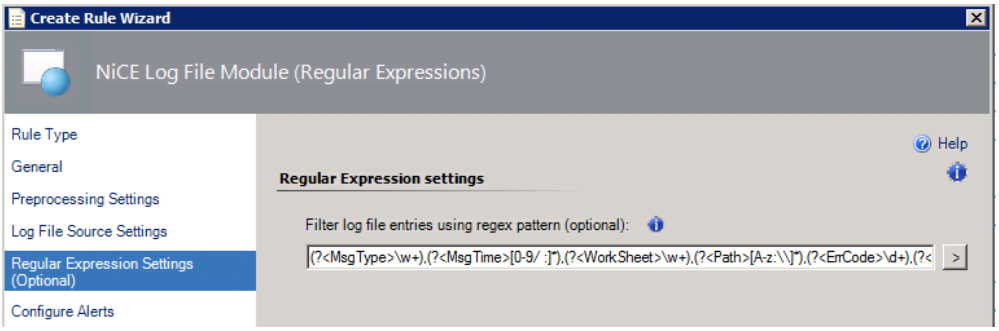
- **(?<Path>[A-z:\\]*)** -> This matches any group of word characters, : and \ and maps them to a variable called Path. In this example it will map the path value "C:\myproject\data" in the line.

- **(?<ErrCode>\d+)** -> This matches any group of numbers and maps the data to a variable called ErrCode. In this example it will map the value "3" to the line to this variable.

You can see more details of using Regular Expressions in the NiCE Log File MP Quick Start Guide under the topic **Regular Expression (Regex)**.

The wizard has a built-in Regex testing tool that you can use to build or test the regular expression using the log file line that we are trying to match.

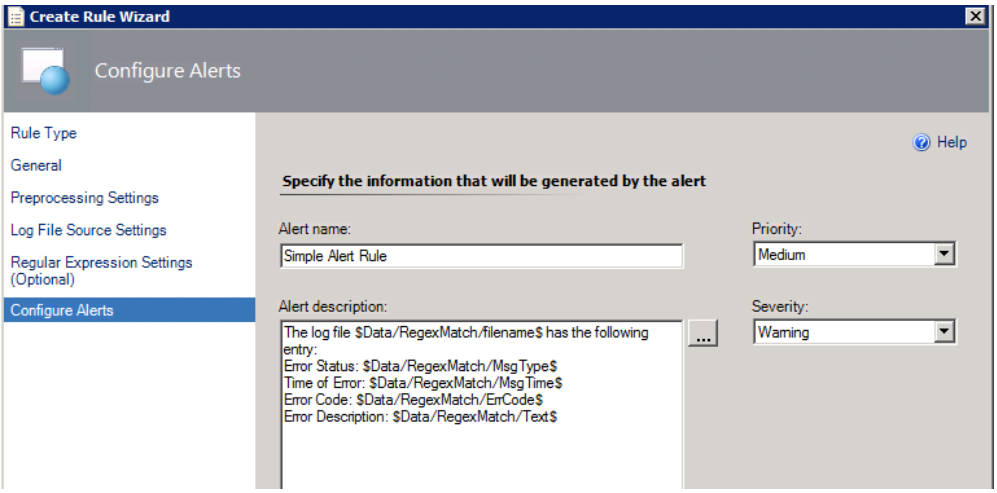
Once you have built the regular expression then you can use that as shown below to do pattern matching



6.) On the **Configure Alerts** pages, define the alert that the rule will generate if there is a matching line in the log file.

In the previous step, we used regular expressions to map data from the log line to specific variables. We can use these variables in the alerts using XPath and so the alert has meaningful information to the user.

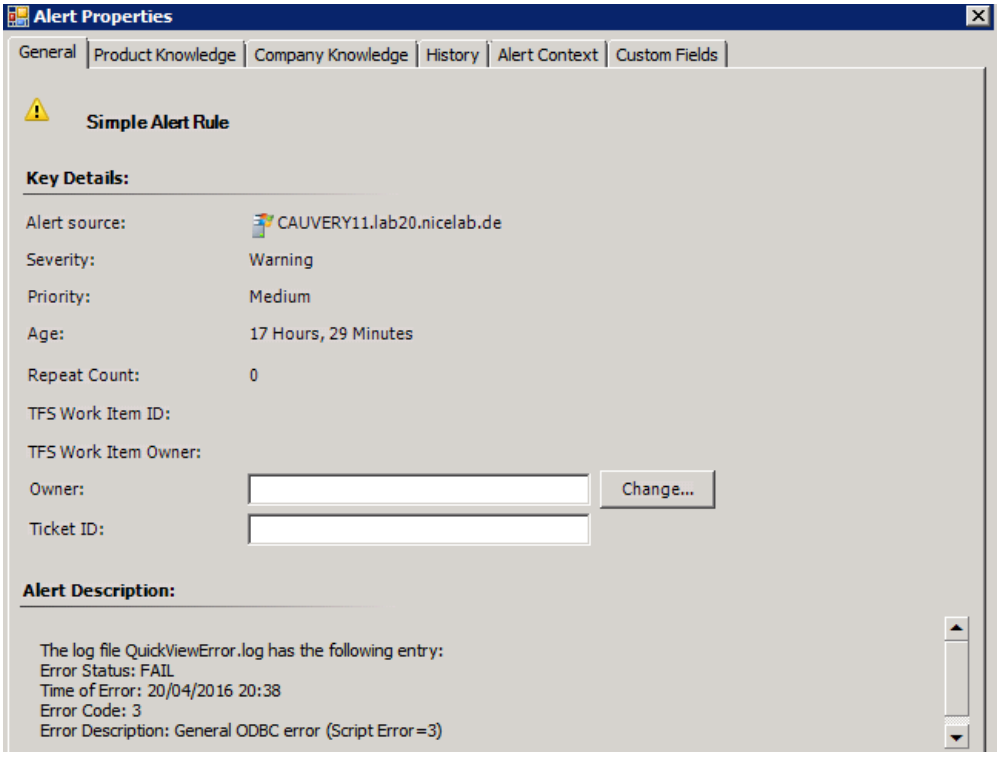
You can see more details on XPath in the NiCE Log File MP Quick Start Guide topic **XPath**.

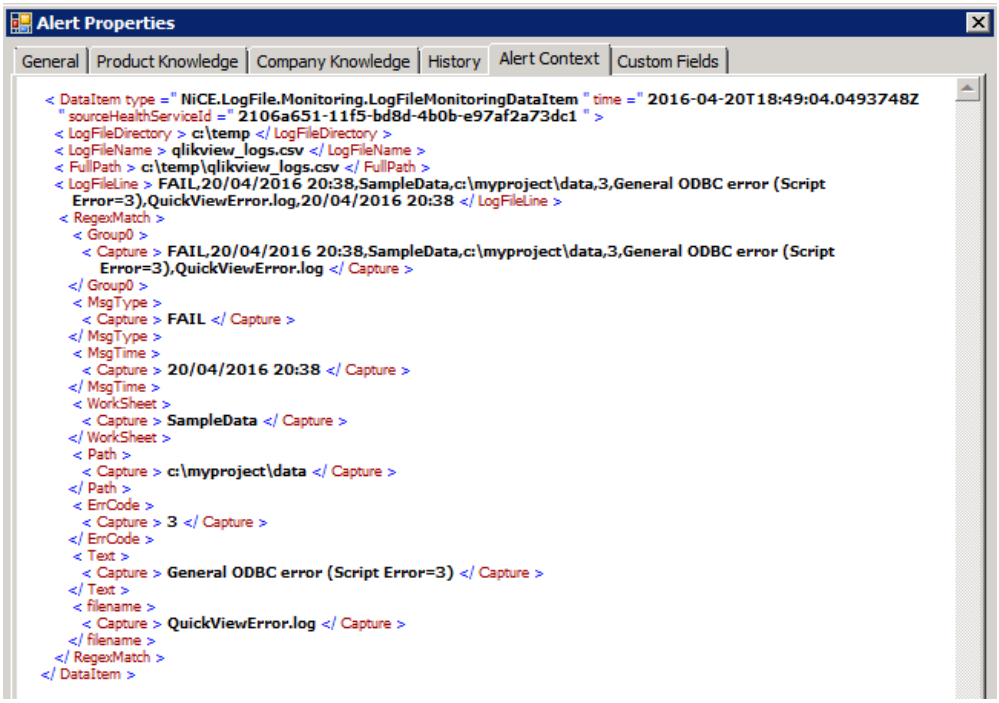


7.) Save the rule and the Alert Rule is now created in the custom MP.

8.) Override the rule as appropriate for your environment so it gets enabled on the node where you have the log file that needs to be monitored.

9.) If all goes as expected, then when a pattern matching line is there in the log file then it will trigger an alert in the SCOM Console. Here is an example alert when a matching line is in the log file.





APPENDIX

You can see below the custom MP that would be created based on the steps listed above. Copy and paste it to any document editor and save it as **Custom.LogFile.MP.xml.**

```
<?xml version="1.0" encoding="utf-8"?><ManagementPack ContentReadable="true"
SchemaVersion="2.0" OriginalSchemaVersion="1.1"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
 <Manifest>
  <Identity>
   <ID>Custom.Log.File</ID>
   <Version>1.0.0.0</Version>
  </Identity>
  <Name>Custom Log File</Name>
  <References>
   <Reference Alias="NiCELogFileLibrary">
    <ID>NiCE.LogFile.Library</ID>
    <Version>1.33.80.0</Version>
    <PublicKeyToken>058cf9bbd5db72a4</PublicKeyToken>
   </Reference>
   <Reference Alias="MicrosoftWindowsLibrary7585010">
    <ID>Microsoft.Windows.Library</ID>
    <Version>7.5.8501.0</Version>
    <PublicKeyToken>31bf3856ad364e35</PublicKeyToken>
   </Reference>
   <Reference Alias="System">
    <ID>System.Library</ID>
    <Version>7.5.8501.0</Version>
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   </Reference>
   <Reference Alias="SystemCenter">
    <ID>Microsoft.SystemCenter.Library</ID>
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    <PublicKeyToken>31bf3856ad364e35</PublicKeyToken>
   </Reference>
   <Reference Alias="Health">
    <ID>System.Health.Library</ID>
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   </Reference>
  </References>
 </Manifest>
 <Monitoring>
  <Rules>
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```
    <Rule ID="MomUIGeneratedRuleeabba150d22647cc903fe08bf76cf900" Enabled="false"
Target="MicrosoftWindowsLibrary7585010!Microsoft.Windows.Computer"
ConfirmDelivery="true" Remotable="false" Priority="Normal" DiscardLevel="100">
      <Category>Alert</Category>
      <DataSources>
       <DataSource ID="DS"
TypeID="NiCELogFileLibrary!NiCE.LogFile.Library.Advanced.LogFileProvider.DS">
        <ProviderConfig>
         <Interval>60</Interval>
         <Unit>Seconds</Unit>
         <SyncTime />
         <WorkingDirectory />
         <Command />
         <Arguments />
         <EnvironmentVariables />
         <Timeout>0</Timeout>
         <Tracing>false</Tracing>
        </ProviderConfig>
        <LogFileProviderConfig>
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         <SubDirectories>false</SubDirectories>
         <Files>
          <FileNamePattern>qlikview_logs.csv</FileNamePattern>
         </Files>
         <ReadMode>Default</ReadMode>
         <RegexFilter>(?&lt;MsgType&gt;\w+),(?&lt;MsgTime&gt;[0-9/
:]*),(?&lt;WorkSheet&gt;\w+),(?&lt;Path&gt;[A-z:\\]*),(?&lt;ErrCode&gt;\d+),(?&lt;Text&gt;[A-z
()=0-9]*),(?&lt;filename&gt;\w+\.\w+)</RegexFilter>
         <RegexSplit />
         <RegexReplace />
        </LogFileProviderConfig>
       </DataSource>
      </DataSources>
      <WriteActions>
       <WriteAction ID="Alert" TypeID="Health!System.Health.GenerateAlert">
        <Priority>1</Priority>
        <Severity>1</Severity>
        <AlertName />
        <AlertDescription />
        <AlertOwner />

<AlertMessageId>$MPElement[Name="MomUIGeneratedRuleeabba150d22647cc903fe08bf76cf
900.AlertMessage"]$</AlertMessageId>
        <AlertParameters>
         <AlertParameter1>$Data/RegexMatch/filename$</AlertParameter1>
         <AlertParameter2>$Data/RegexMatch/MsgType$</AlertParameter2>
         <AlertParameter3>$Data/RegexMatch/MsgTime$</AlertParameter3>
```

```
          <AlertParameter4>$Data/RegexMatch/ErrCode$</AlertParameter4>
          <AlertParameter5>$Data/RegexMatch/Text$</AlertParameter5>
         </AlertParameters>
         <Suppression>
          <SuppressionValue>The log file $Data/RegexMatch/filename$ has the following
entry:</SuppressionValue>
          <SuppressionValue>Error Status: $Data/RegexMatch/MsgType$</SuppressionValue>
          <SuppressionValue>Time of Error: $Data/RegexMatch/MsgTime$</SuppressionValue>
          <SuppressionValue>Error Code: $Data/RegexMatch/ErrCode$</SuppressionValue>
          <SuppressionValue>Error Description: $Data/RegexMatch/Text$</SuppressionValue>
         </Suppression>
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         <Custom2 />
         <Custom3 />
         <Custom4 />
         <Custom5 />
         <Custom6 />
         <Custom7 />
         <Custom8 />
         <Custom9 />
         <Custom10 />
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    </Rules>
  </Monitoring>
  <Presentation>
    <Folders>
     <Folder ID="Folder_d1bf4fb26b374daeb644c9bff5e950ea" Accessibility="Public"
ParentFolder="SystemCenter!Microsoft.SystemCenter.Monitoring.ViewFolder.Root" />
    </Folders>
    <StringResources>
     <StringResource
ID="MomUIGeneratedRuleeabba150d22647cc903fe08bf76cf900.AlertMessage" />
    </StringResources>
  </Presentation>
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      <DisplayString ElementID="Custom.Log.File">
       <Name>Custom Log File</Name>
      </DisplayString>
      <DisplayString ElementID="Folder_d1bf4fb26b374daeb644c9bff5e950ea">
       <Name>Custom Log File</Name>
      </DisplayString>
      <DisplayString ElementID="MomUIGeneratedRuleeabba150d22647cc903fe08bf76cf900">
       <Name>Simple Alert Rule</Name>
```

```
      </DisplayString>
      <DisplayString
ElementID="MomUIGeneratedRuleeabba150d22647cc903fe08bf76cf900.AlertMessage">
        <Name>Simple Alert Rule</Name>
        <Description>The log file {0} has the following entry:
Error Status: {1}
Time of Error: {2}
Error Code: {3}
Error Description: {4}</Description>
      </DisplayString>
      <DisplayString ElementID="MomUIGeneratedRuleeabba150d22647cc903fe08bf76cf900"
SubElementID="DS">
        <Name>Log File Provider</Name>
      </DisplayString>
      <DisplayString ElementID="MomUIGeneratedRuleeabba150d22647cc903fe08bf76cf900"
SubElementID="Alert">
        <Name>Alert</Name>
      </DisplayString>
    </DisplayStrings>
  </LanguagePack>
 </LanguagePacks>
</ManagementPack>
```

Prerequisites

Installation and Configuration

Overview