expit

White Paper

SCOM 2007 R2 Scheduled maintenance mode

Abstract

SCOM 2007 R2 comes with many customizable features and customization options. In most cases these customization are performed directly via the various SCOM interfaces, but some still require the creation of specialized components to fulfill the requirements. This document highlights one of those missing features which is the ability to schedule maintenance tasks across multiple system simultaneously. The solution presented here was developed in customized by Expit through field engagements with multiple SCOM customers.

Contents

Author's Disclaimer and Copyright:

Introduction

System Center Operations Manager 2007 R2 is a very powerful tool to manage and monitor datacenters. It has some many advanced features including placing servers under maintenance mode during critical errors or operating system upgrades to minimize the number of alerts and emails. This option is valuable for IT operations teams except for one drawback, scheduling multiple servers to enter maintenance mode in advance is not possible with the current SCOM interfaces. An SCOM administrator needs to be present at the time of switching any server into maintenance mode and this task must be carried out one server at a time.

Situation

A situation arises when the IT infrastructure team requires a downtime approval for scheduled server updates and has to schedule an advanced maintenance request in SCOM to carry out the jobs. The solution we present in this white paper addresses this issue and allows the scheduling of maintenance tasks in advance via SCOM across multiple servers.

Solution

The solution presented here is based on a two layer approach to solving this problem. The first layer as a front end to display the list of servers and collect the schedule information and the second layer as a backend service to place the servers under maintenance at the scheduled time.

First Layer

We used Active Server Pages to create a front end user interface for a SCOM administrator to schedule the maintenance.

default.asp

```
<html>
<head>
<title> SCOM: Scheduled Maintenance window</title>
<style>
body, td {font-family: arial, verdena; font-size: 10pt;}
td {border: 0pt solid gray;}
input {border: 1pt solid gray}
table {background-color: #efefef}
table.tbl {border: 1p solid gray}
</style>
</head>
<body>

<%

if request.form("netbiosnames") = "" then
```

```
dim con, rs
dim mresolutionstate
set con = server.createobject("ADODB.Connection")

con.open "Provider=SQLNCLI; Server=<Server IP>; Database=<SCOM DB Name>; Uid=<Your
UserID>; Pwd=<Your Password>"
set rs = server.createobject("ADODB.Recordset")

rs.open "select networkname from mt_computer where networkname is not null order by
1",con

response.write "<img align=right src=""../logo.gif"" style=""margin-right:
90px;""><br><br><br><br><br><br><table class=tbl border=1 width=""85%""
align=center><tr><td style=""border-right: 1pt solid gray;"" width=""50%"">"
response.write "<strong>Please select required servers: </strong><br><form
name=""frmMaintenance"" method=""post"" action=""#"">"
response.write "<select style=""border: 1pt; margin-left: 10pt;""
name=""netbiosnames"" multiple style=""width:200pt;"" size=25>"
while not rs.eof
response.write "<option value=""" & rs.fields(0) & """>" & rs.fields(0) & "</option>"
rs.movenext
wend
response.write "</select>"
response.write "</td><td valign=""top""><strong>Please specify maintenance
period:</strong><br><br>"
response.write "<table border=0 style=""margin-left: 10pt;"">"
response.write "<tr><td>Start DateTime</td><td><input type=""text"" name=""txtdate""
value=""mm/dd/yyyy""> - <input type=""text"" name=""txttime""

value=""hh:mm"" style=""width:50px;""></td></tr>"
response.write "<tr><td>End Time</td><td><input type=""text"" name=""txtendtime"">
<select name=""seltimetype""><option value=""mins"">Mins</option><option

value=""hrs"">Hrs</option></select></td></tr>"
response.write "<tr><td>Comments</td><td><textarea
name=""txtcomments""></textarea></td></tr>"
response.write "<tr><td colspan=2><br><input type=""submit"" value=""Set
Schedule""><br><br></td></tr>"
response.write "</table>"
response.write "<table width=""100%"" style=""border-top: 1pt solid gray""><tr><td>"
response.write "<strong>How to use:</strong><br><br>"
response.write "Please follow the following steps to schedule maintenance windows for
servers:<br><br>"
response.write "<strong>Step 1:</strong> Select required servers from the servers list
(press shift or ctrl to select multipe).<br>"
response.write "<strong>Step 2:</strong> Specify start date in right hand side pane
(date format should be mm/dd/yyyy). Specify time to start the

maintainance. Please make sure time format is (hh:mm).<br>"
response.write "<strong>Step 3:</strong> Specify End time in minutes or hours.<br>"
response.write "<strong>Step 4:</strong> Put any comments in the comments input
box.<br>"
response.write "<strong>Step 5:</strong> Click on Set Schedule button.<br>"
response.write "</td></tr></table>"

response.write "<br>"
response.write "</form>"
response.write "</td></tr></table>"
rs.close
set rs=nothing
con.close
```

```
set con=nothing

else

dim anames,aendtime
dim fs,fname
set fs=Server.CreateObject("Scripting.FileSystemObject")
set fname=fs.CreateTextFile("C:\ScheduledMaintenance.bat",true)

aendtime = request.form("txtendtime")
if request.form("seltimetype") = "mins" then
  aendtime = aendtime / 100
end if
anames = split(request.form("netbiosnames"),",")

for aloop = 0 to ubound(anames)

fname.WriteLine("powershell c:\mm.ps1 -rmsServerName:<RMS Server Name> -
computerPrincipalname:""" & anames(aloop) & """

-numberofhoursinmaintenancemode:" & aendtime  & " -comment:""" &
request.form("txtcomments") & """")

next

fname.Close
set fname=nothing
set fs=nothing



wmcmd = "schtasks.exe /create /tn ScheduledMaintenance /tr C:\
ScheduledMaintenance.bat /sc once /st " & request.form("txttime") & " /sd " &
request.form("txtdate") & " /ru SYSTEM /f"


dim fsn, fnamen
set fsn = server.createobject ("Scripting.FileSystemObject")
set fnamen = fsn.createTextFile ("C:\doschedule.cmd")
fnamen.writeline (wmcmd)
fnamen.close
set fnamen = nothing
set fsn = nothing

'Dim WshShell, parameters
'Set WshShell = Server.CreateObject("WScript.Shell")
'WshShell.Run wmcmd
'set WshShell = nothing

response.redirect <Your HelpDesk System URL to open a ticket, attach c:\doschedule.cmd
to the ticket.>

end if

%>

</body>
</html>
```

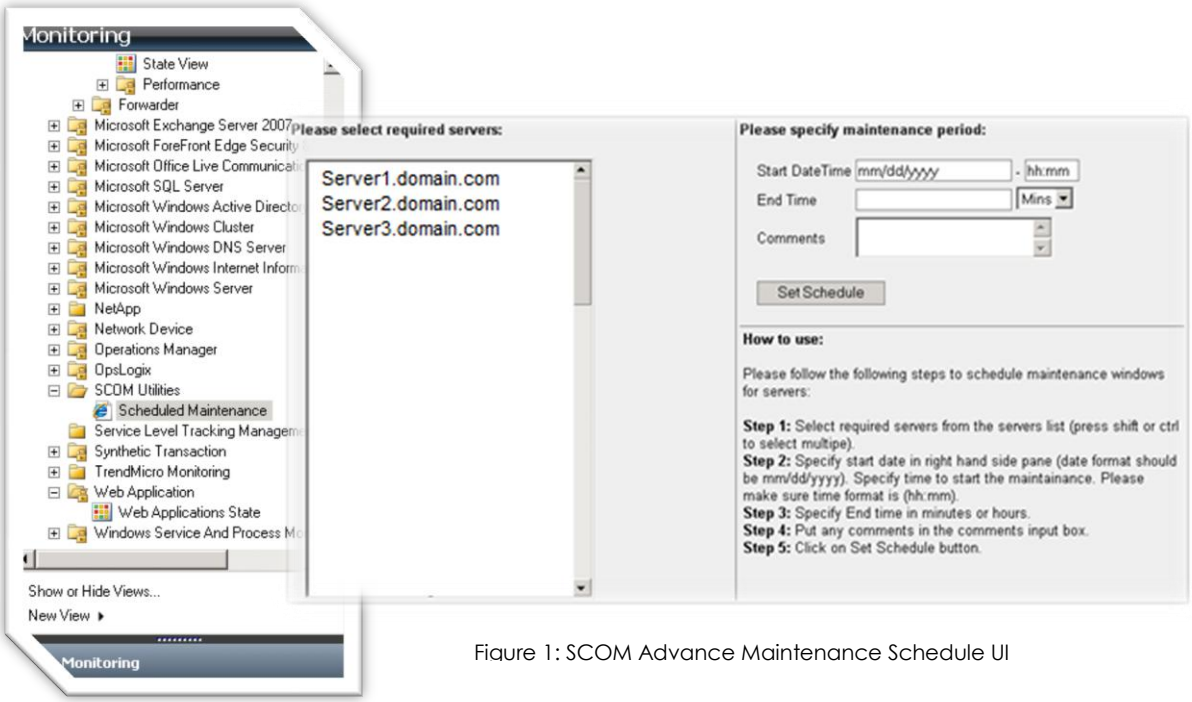


Figure 1: SCOM Advance Maintenance Schedule UI

Second Layer

The backend layer consists of the Windows Scheduled Tasks which runs a Powershell script that switches the managed servers into maintenance.

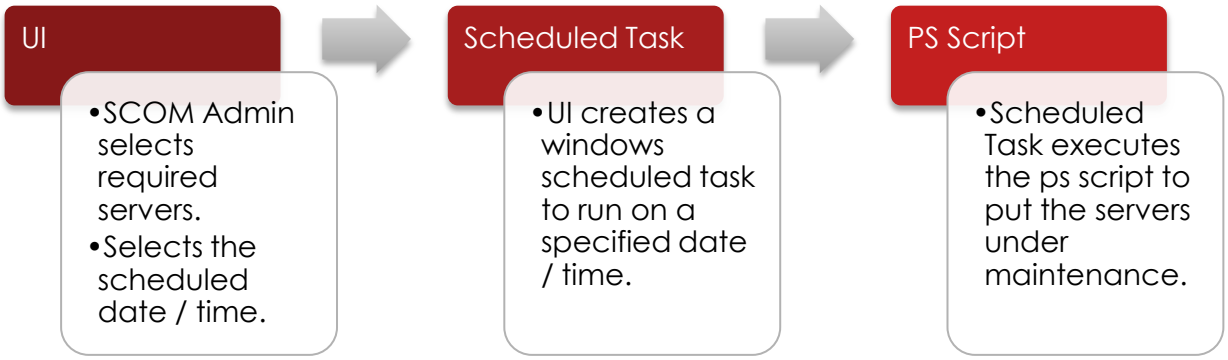
PS Script to switch servers into maintenance

mm.ps1

```
param($rmsServerName,$computerPrincipalName,$numberOfHoursInMaintenanceMode,$comment)

add-pssnapin "Microsoft.EnterpriseManagement.OperationsManager.Client";
set-location "OperationsManagerMonitoring::";
new-managementGroupConnection -ConnectionString:$rmsServerName;
set-location $rmsServerName;

$computerClass = get-monitoringclass -name:Microsoft.Windows.Computer

$healthServiceClass = get-monitoringclass -name:Microsoft.SystemCenter.HealthService

$healthServiceWatcherClass = get-monitoringclass -
name:Microsoft.SystemCenter.HealthServiceWatcher

$computerCriteria = "PrincipalName='" + $computerPrincipalName + "'"

$computer = get-monitoringobject -monitoringclass:$computerClass -
criteria:$computerCriteria
```

```
$healthServices = $computer.GetRelatedMonitoringObjects($healthServiceClass)

$healthService = $healthServices[0]

$healthServiceCriteria = "HealthServiceName='" + $computerPrincipalName + "'"

$healthServiceWatcher = get-monitoringobject -
monitoringclass:$healthServiceWatcherClass -criteria:$healthServiceCriteria

$startTime = [System.DateTime]::Now

$endTime = $startTime.AddHours($numberOfHoursInMaintenanceMode)

"Putting " + $computerPrincipalName + " into maintenance mode"
New-MaintenanceWindow -startTime:$startTime -endTime:$endTime -
monitoringObject:$computer -comment:$comment
```

The Connection



Implementation Steps

To implement the solution these steps needs to be followed;

1. Create a webpage named default.asp in inetpub/wwwroot folder on your OpsMgr server either RMS or any other MS server.
2. Change the connection settings and helpdesk settings in default.asp.
3. Copy mm.ps1 script and paste it in notepad, save the file as mm.ps1 in c:\.
4. Open the user interface by providing the URL in your web browser.
5. You are ready to define an advance schedule to server maintenance.

About the Author

Ameen Abdullah is an Infrastructure Consultant presently working with expit Kuwait. His expertise includes System Center Operations Manager 2007 and Configuration Manager 2007 design and implementation.

Resources and References

Microsoft System Center Operations Manager
http://www.microsoft.com/systemcenter/operationsmanager/en/us/default.aspx

Expit Kuwait
http://www.expit.com