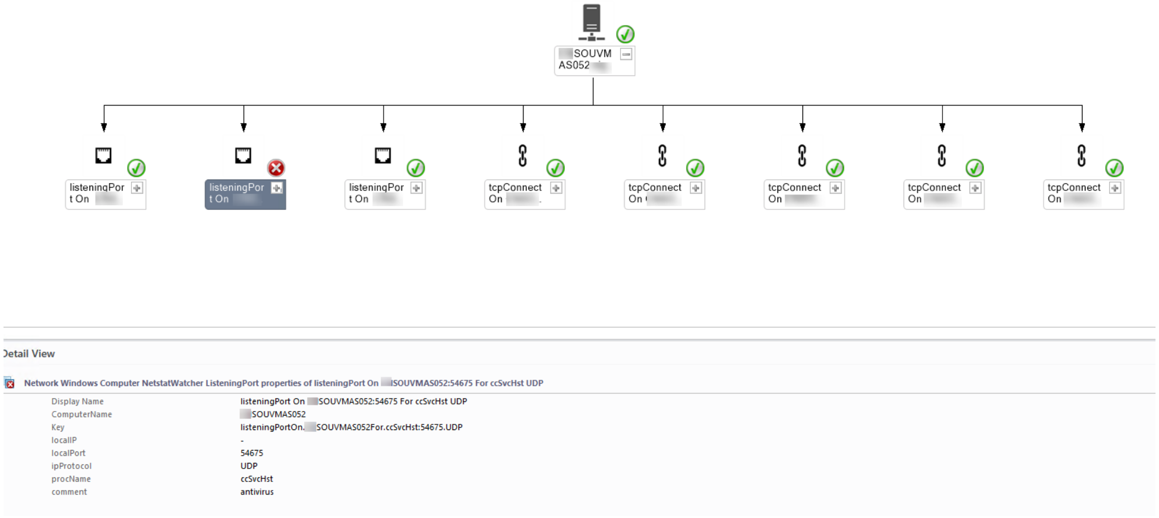
Monitor any network-connection or listening port with SCOM

SCOM offers ‘wizards’ to monitor Windows Services and processes. Most of the cases this is enough to ensure that the application works.
Sometimes however multiple connections are handled by a service or a process.

Ready to use ‘port monitors’ help to identify if a port on a target machine responds.
There are cases however where connection attempts can irritate or even crash an application.

In hybrid scenarios part of the application runs in the cloud. – A windows machine might act as gateway for example. It would be good to know if the connection to endpoint in the cloud is still active.

A custom management pack which uses **netstat** and **powershell** can help.



Detail View

Network Windows Computer NetstatWatcher ListeningPort properties of listeningPort On [redacted]ISOUVMAS052:54675 For ccSvcHst UDP

Display Name	listeningPort On [redacted]SOUVMAS052:54675 For ccSvcHst UDP
ComputerName	[redacted]SOUVMAS052
Key	listeningPortOn.[redacted]SOUVMAS052For.ccSvcHst:54675.UDP
localIP	-
localPort	54675
ipProtocol	UDP
procName	ccSvcHst
comment	antivirus

Diagram view showing monitored listening ports and tcp connections

Following lines explain the briefly the components of the management pack and the logic behind it. – To ensure the code also runs on Windows Server 2008 R2 it’s compatible to PowerShell version 2.

Defining the requirement

Connections or ports that need to be monitored need to be known by SCOM first. The technical term is called ‘discovery’.
To be monitored connections need to be stored in file named ‘monitoredTcpConnects.csv’. The header row must keep and the ‘comment‘ is optional. Either specify remote (host) Name or the remote IP address. E.g.

```
remoteIP,remoteName,remotePort,procName,comment
10.1.11.83,,80,CcmExec,sccm
,linvmas146,5723,HealthService
194.69.46.72,,40936,powershell
```

To be monitored ports need to be stored in file named ‘monitoredListeningPorts.csv’. The header row must keep and the ‘comment‘ is optional. E.g.

```
ipProtocol,localIP,localPort,procName,comment
udp,127.0.0.1,49740,dfsrs
udp,,161,snmp
tcp,,10115,endpoint,perfdata
```

Preparing raw data

Running ‘netstat -ano’ lists all established connections and listening ports including the process identification number (PID) which is using it.

```
C:\>netstat -ano

Active Connections

Proto  Local Address          Foreign Address        State           PID
TCP    0.0.0.0:81             0.0.0.0:0              LISTENING
TCP    0.0.0.0:135            0.0.0.0:0              LISTENING       948
TCP    0.0.0.0:445            0.0.0.0:0              LISTENING       4
TCP    172.19.18.225:22326    172.19.14.30:8080      ESTABLISHED     7152
TCP    172.19.18.225:22494    172.19.10.55:80        ESTABLISHED     6388
TCP    172.19.18.225:23063    172.19.10.36:17295     ESTABLISHED     2756
UDP    192.168.96.1:5353      *:*                                    1948
UDP    192.168.116.1:137      *:*                                    4
UDP    192.168.116.1:1900     *:*                                    9844
```

The function below runs ‘netstat’, stores the result in a file and converts it then into a list of objects for further processing. A parameter decides whether the list shall contain ‘listening ports objects’ or ‘established connection objects’.

```
#retrieving computer anme and ip addresses for later use
$localComputerName    = $env:COMPUTERNAME
$localIPAddresses     = ([System.Net.Dns]::GetHostAddresses($localComputerName)) | Where-Object {
$_.AddressFamily -eq 'interNetwork' } | `
                                                                                       Select-
Object -ExpandProperty IPAddressToString

Function Format-NetstatData {

        param(
                [Parameter(Mandatory=$true)][object]$netstatInPut,
                [Parameter(Mandatory=$true)][string]$qryType,
                [Parameter(Mandatory=$true)][ref]$nestatIPData
        )

        #retrieving all processes to map PID in netstat to executable name
        $allProcesses    = Get-Process | Select-Object -Property Name, id

        $netStatConnects = New-Object -TypeName System.Collections.Generic.List[object]
        $netStatArr      =  $netstatInPut -split "`r`n"

        $netStatArr | ForEach-Object {

                $netStatItm = $_

                if ($netStatItm -match "\d") {

                        #split the line by using 'more than 2 white spaces' as delimitation
                        $netStatItmParts = [Regex]::Split($netStatItm,"\s{2,}")


                        if ($qryType -eq 'tcpConnection') {

                                $proto          = $netStatItmParts[1]

                                $localIP        = ($netStatItmParts[2] -split ':')[0]
                                $localPort       = ($netStatItmParts[2] -split ':')[1]

                                $remoteIP        = ($netStatItmParts[3] -split ':')[0]
                                $remotePort      = ($netStatItmParts[3] -split ':')[1]
                                $connectState    = $netStatItmParts[4]
                                $procId          = $netStatItmParts[5]

                                $procInfo        = $allProcesses | Where-Object { $_.id -eq 
$procId }
                                $procName        = $procInfo.Name

                                if ($localIPAddresses -contains $localIP) {
                                        $localName = $localComputerName
                                }

                                #filtering records to only contain connections to remote systems
                                if (($localIp -match $regIpPat -and $remoteIp -match $regIpPat) -
and ($remoteIP -notmatch '0.0.0.0|127.0.0.1') ) {
                                        $myNetHsh = @{'proto' = $proto}
                                        $myNetHsh.Add('localIP', $localIP)
                                        $myNetHsh.Add('localName', $localName)

                                        $myNetHsh.Add('remoteIP', $remoteIP)
                                        $myNetHsh.Add('remotePort', $remotePort)
                                        $myNetHsh.Add('connectState', $connectState)
                                        $myNetHsh.Add('procId', $procId)
                                        $myNetHsh.Add('procName', $procName)


                                        $myNetObj = New-Object -TypeName PSObject -Property 
$myNetHsh
                                        $null     = $netStatConnects.Add($myNetObj)
                                }

                        } else {

                                $proto               = $netStatItmParts[1]

                                if ($proto -ieq 'TCP') {
                                        $localIP          = ($netStatItmParts[2] -split ':')[0]
                                        $localPort        = ($netStatItmParts[2] -split ':')[1]

                                        $remoteIP         = ($netStatItmParts[3] -split ':')[0]
                                        $remotePort       = ($netStatItmParts[3] -split ':')[1]
                                        $connectState     = $netStatItmParts[4]
                                        $procId           = $netStatItmParts[5]

                                } else {
                                        $localIP          = ($netStatItmParts[2] -split ':')[0]
                                        $localPort        = ($netStatItmParts[2] -split ':')[1]

                                        $remoteIP         = ($netStatItmParts[3] -split ':')[0]
                                        $remotePort       = ($netStatItmParts[3] -split ':')[1]
                                        $connectState     = '-'
                                        $procId           = $netStatItmParts[4]

                                }

                                $procInfo = $allProcesses | Where-Object { $_.id -eq $procId }
                                $procName = $procInfo.Name

                                if ($localIPAddresses -contains $localIP) {
                                        $localName = $localComputerName
                                }

                                if (($localIp -match $regIpPat) -and ($remoteIP -match 
'\*|0.0.0.0|127.0.0.1') ) {
                                        $myNetHsh = @{'proto' = $proto}
                                        $myNetHsh.Add('localIP', $localIP)
                                        $myNetHsh.Add('localName', $localName)

                                        $myNetHsh.Add('localPort', $localPort)

                                        $myNetHsh.Add('connectState', $connectState)
                                        $myNetHsh.Add('procId', $procId)
                                        $myNetHsh.Add('procName', $procName)


                                        $myNetObj = New-Object -TypeName PSObject -Property
$myNetHsh

                                        $null     = $netStatConnects.Add($myNetObj)
                                }

                        } # END if ($qryType -eq 'tcpConnect')


                } #END if ($netStatItm -match "\d")

        } #END $netStatIpArr | ForEach-Object {}

        If ($netStatConnects.count -gt 0) {
                $rtn = $true
                $nestatIPData.Value = $netStatConnects
        } else {
                $rtn = $false
        }

        $rtn

} #END Funciton Format-NetstatIPData

#running netsat -ano and piping it into a file which then is read. - Tests reveal that it's
quicker than
#directly storing the result in a variable.

Invoke-Expression "C:\Windows\System32\netstat.exe -ano" | Out-File -FilePath $netStatIpFile
$netStatIp = Get-Content -Path $netStatIpFile | Out-String

$netStatIPConnects = New-Object -TypeName System.Collections.Generic.List[object]
Format-NetstatData -netstatInPut $netStatIp -qryType $discoveryItem -nestatIPData
([ref]$netStatIPConnects)
```

Interpreting output and initiate reaction

To check now whether a defined connection is active or a port is listing ‘should and is’ is compared. – As the code for listening ports is very similar, it’s not shown below.

```
if($MonitorItem -eq 'tcpConnection') {

        $monitoredTcpConnectsFilePath = $filePath + '\' + 'monitoredTcpConnects.csv'

        if (Test-Path -Path $monitoredTcpConnectsFilePath) {

                $monitoredTcpConnects = Import-Csv -Path $monitoredTcpConnectsFilePath

                #working through all connections mentioned in the file
                foreach ($tcpConnect in $monitoredTcpConnects) {

                        $remoteIP        = ''
                        $remoteName      = ''
                        $remotePort      = ''
                        $comment         = ''
                        $procName        = ''
                        $connectDetails  = ''
                        $connectionState = ''

                        $remoteIP        = $tcpConnect.remoteIP
                        $remoteName      = $tcpConnect.remoteName
                        $remotePort      = $tcpConnect.remotePort
                        $comment         = $tcpConnect.comment
                        $procName        = $tcpConnect.procName

                        #resolving remote IP if remote name was mentioned
                        if ($remoteName -and ([String]::IsNullOrEmpty($remoteIP))) {
                                $remoteIP = [system.net.dns]::Resolve($remoteName).AddressList |
Where-Object { $_.AddressFamily -eq 'interNetwork' } | Select-Object -ExpandProperty
IPAddressToString
                        }

                        if ($remotePort -and $remoteIP) {

                                #checking if the mentioned connection is currently active plus
retrieving additional information
                                $connectDetails = $netStatIPConnects | Where-Object {
$_.remotePort -eq $remotePort -and $_.remoteIP -eq $remoteIP }


                                #if connection is not active sending back 'Red' which will be
interpreted as critical alert
                                if ([string]::IsNullOrEmpty($connectDetails) -or
[string]::IsNullOrWhiteSpace($connectDetails)) {

                                        $localIP         = $localIPAddresses

                                        $Key             =
"tcpConnectOn$($localComputerName)For$($procName)To$($remoteIP):$($remotePort)"

                                        $connectionState = 'No active connection found.'


                                        $state           = 'Red'
                                        $localPort       = 'NA'

                                        $supplement      = "localIP: $($localIP)`t localPort:
$($localPort)`n procName: $($procName)`n ConnecionState: $($connectionState)`n"
                                        $supplement     += "remoteIP: $($remoteIP)`t remotePort:
$($remotePort)`n"
```

```
                                         #a 'property bag' is sent back to inform SCOM the state
of the particular object
                                         $bag = $api.CreatePropertybag()

                                         $bag.AddValue("Key",$key)
                                         $bag.AddValue("State",$state)
                                         $bag.AddValue("Supplement",$supplement)
                                         $bag.AddValue("TestedAt",$testedAt)
                                         $bag

                                         continue

                                 } #END if ([string]::IsNullOrEmpty($connectDetails) -or
[string]::IsNullOrWhiteSpace($connectDetails))

                                 #if is / are mentioned active connections looping through them
                                 foreach ($connDetail in $connectDetails) {


                                         $connectionState = ''
                                         $supplement      = ''
                                         $localIP         = $connDetail.localIP


                                         #resolve hostname if only IP is there
                                         if ([String]::IsNullOrEmpty($remoteName)) {
                                                 $tmpName =
[system.net.dns]::Resolve($remoteIP).HostName
                                                 if ($tmpName -ne $remoteIP) {
                                                         $tmpName    = $tmpName -replace

$localComputerDomain,''

                                                         $tmpName    = $tmpName -replace '\.',''
                                                         $remoteName = $tmpName
                                                 } else {
                                                         $remoteName = 'No reverse record in

DNS.'

                                                 }
                                         }

                                         #resolve hostname if hostname is an IP
                                         if ($remoteName -match
'\d{1,3}\.\d{1,3}\.\d{1,3}\.\d{1,3}') {

                                                 $tmpName =
[system.net.dns]::Resolve($remoteName).HostName
                                                 if ($tmpName -ne $remoteIP) {
                                                         $tmpName    = $tmpName -replace

$localComputerDomain,''

                                                         $tmpName    = $tmpName -replace '\.',''
                                                         $remoteName = $tmpName
                                                 } else {
                                                         $remoteName = 'No reverse record in

DNS.'

                                                 }
                                         }

                                         $Key             =
"tcpConnectOn$($localComputerName)For$($procName)To$($remoteIP):$($remotePort)"

                                         $connectionState = $connDetail.connectState

                                         $supplement      = "localIP: $($localIP)`t  `n procName:
$($procName)`t `n ConnecionState: $($connectionState)`n"
                                         $supplement     += "remoteIP: $($remoteIP)`t remotePort:
$($remotePort)`n"

                                         #if the connection is ESTABLISHED, 'green' is healthy
state, if it is 'TIME_WAIT' then 'yellow' indicates a warning state,
                                         #if none of both it's most likely CLOSE_WAIT where 'Red'
returns critical state
                                         if ($connectionState -eq 'ESTABLISHED') {
                                                 $state       = 'Green'

                                         } elseif ($connectionState -eq 'TIME_WAIT') {

                                                 $state       = 'Yellow'
                                                 $supplement += 'TIME_WAIT = Local endpoint (this
computer) has closed the connection.'
                                         } else {
                                                 $state       = 'Red'
                                                 $supplement += 'CLOSE_WAIT = Remote endpoint

(this computer) has closed the connection.'
                                         }



                                         #a 'property bag' is sent back to inform SCOM the state
of the particular object
                                         $bag = $api.CreatePropertybag()

                                         $bag.AddValue("Key",$key)
                                         $bag.AddValue("State",$state)
                                         $bag.AddValue("Supplement",$supplement)
                                         $bag.AddValue("TestedAt",$testedAt)
                                         $bag


                                 } #END foreach ($connDetail in $connectDetails)


                         } else {

                                 $foo = 'No details this time, not sending to inventory.'

                         } # END if ($connectDetails)

                 } #END foreach($tcpConnect in $monitoredTcpConnects)


        } else {

                 $api.LogScriptEvent('Monitor NetStatWatcher Three
State.ps1',3002,1,"NetStatWatcherMon MonitorItem $($MonitorItem) - File not found in
$($monitoredTcpConnectsFilePath)")

        }

}
```

Management Pack components

Classes

Everything in SCOM that has a Health State is an object. Instead of checking all Windows computers for the existing of those files and changing their health state (green/yellow/red) directly, a dedicated computer class is defined.

```
<ClassType ID="Network.Windows.Computer.NetstatWatcher.Computer" Accessibility="Public"
Abstract="false" Base="Windows!Microsoft.Windows.ComputerRole" Hosted="true" Singleton="false"
Extension="false">
  <Property ID="FilePath" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
  <Property ID="NodeName" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
</ClassType>
```

Also, a class for ‘tcp connections’ and ‘listening ports’ is required:

```
<ClassType ID="Network.Windows.Computer.NetstatWatcher.TcpConnection" Accessibility="Public"
Abstract="false" Base="System!System.LogicalEntity" Hosted="false" Singleton="false"
Extension="false">
    <Property ID="ComputerName" Type="string" AutoIncrement="false" Key="false"
CaseSensitive="false" MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="Key" Type="string" AutoIncrement="false" Key="true" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="localIP" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="localName" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="remoteIP" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="remoteName" Type="string" AutoIncrement="false" Key="false"
CaseSensitive="false" MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="remotePort" Type="string" AutoIncrement="false" Key="false"
CaseSensitive="false" MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="procName" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="512" MinLength="0" Required="false" Scale="0" />
    <Property ID="comment" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="1024" MinLength="0" Required="false" Scale="0" />
</ClassType>

<ClassType ID="Network.Windows.Computer.NetstatWatcher.ListeningPort" Accessibility="Public"
Abstract="false" Base="System!System.LogicalEntity" Hosted="false" Singleton="false"
Extension="false">
    <Property ID="ComputerName" Type="string" AutoIncrement="false" Key="false"
CaseSensitive="false" MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="Key" Type="string" AutoIncrement="false" Key="true" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
```

```
    <Property ID="localIP" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="localPort" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="ipProtocol" Type="string" AutoIncrement="false" Key="false"
CaseSensitive="false" MaxLength="256" MinLength="0" Required="false" Scale="0" />
    <Property ID="procName" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="512" MinLength="0" Required="false" Scale="0" />
    <Property ID="comment" Type="string" AutoIncrement="false" Key="false" CaseSensitive="false"
MaxLength="1024" MinLength="0" Required="false" Scale="0" />
</ClassType>
```

To create a relation between computer and it's monitored tcp-connections or listening-ports two additional classes are required:

```
<RelationshipType ID="Network.Windows.Computer.NetstatWatcher.ComputerHostsTcpConnection"
Accessibility="Public" Abstract="false" Base="System!System.Containment">
    <Source ID="Source" MinCardinality="0" MaxCardinality="2147483647"
Type="Network.Windows.Computer.NetstatWatcher.Computer" />
    <Target ID="Target" MinCardinality="0" MaxCardinality="2147483647"
Type="Network.Windows.Computer.NetstatWatcher.TcpConnection" />
</RelationshipType>

<RelationshipType ID="Network.Windows.Computer.NetstatWatcher.ComputerHostsListeningPort"
Accessibility="Public" Abstract="false" Base="System!System.Containment">
    <Source ID="Source" MinCardinality="0" MaxCardinality="2147483647"
Type="Network.Windows.Computer.NetstatWatcher.Computer" />
    <Target ID="Target" MinCardinality="0" MaxCardinality="2147483647"
Type="Network.Windows.Computer.NetstatWatcher.ListeningPort" />
</RelationshipType>
```

Discoveries

The mechanism of finding objects that match the definition and storing it in the SCOM database is called discovery. There are different types of discoveries, starting from matching registry values over results of an WMI query to scripts that can cover everything. Targets define on which component the discovery shall run.

First discovery **Discovery.NetstatWatcher.Computer** is used to find computer objects. Targeted are all Windows computers (which are already monitored by SCOM).
The FilteredRegistryDiscoveryProvider' scans the registry and if the key HKLM\SOFTWARE\ABCIT\NetstatWatcher exists, the object will be created. The interval is daily.

Also discovered here is the 'FiltePath' which is used to define the path in the file system where both text files shall be found.

Second discovery **Discovery.NetstatWatcher.listeningPorts** finds listening ports reading out 'monitoredListeningPorts.csv'. Targeted are the previously discovered '…NetstatWatcher.Computer' – computer objects.
The 'TimedPowerShell.DiscoveryProvider' triggers the 'DiscoverNetstatWatcherItems.ps1' – PowerShell script which does the logic (see above: Preparing raw data). Interval is hourly.

Third discovery **Discovery.NetstatWatcher.tcpConnections** finds listening ports reading out 'monitoredTcpConnects.csv'. Targeted are the previously discovered '…NetstatWatcher.Computer' – computer objects.
The 'TimedPowerShell.DiscoveryProvider' triggers the 'DiscoverNetstatWatcherItems.ps1' – PowerShell script which does the logic (see above: Preparing raw data). Interval is hourly.

Fourth and Fifth discovery **Discovery.NetstatWatcher.ComputerHostsTcpConnections / …ComputerHostsListeningPorts** creates the relation between computers and the monitored objects.
The 'TimedPowerShell.DiscoveryProvider' triggers the 'DiscoverNetstatWatcherItemRelations.ps1'. Interval is hourly.

Monitors

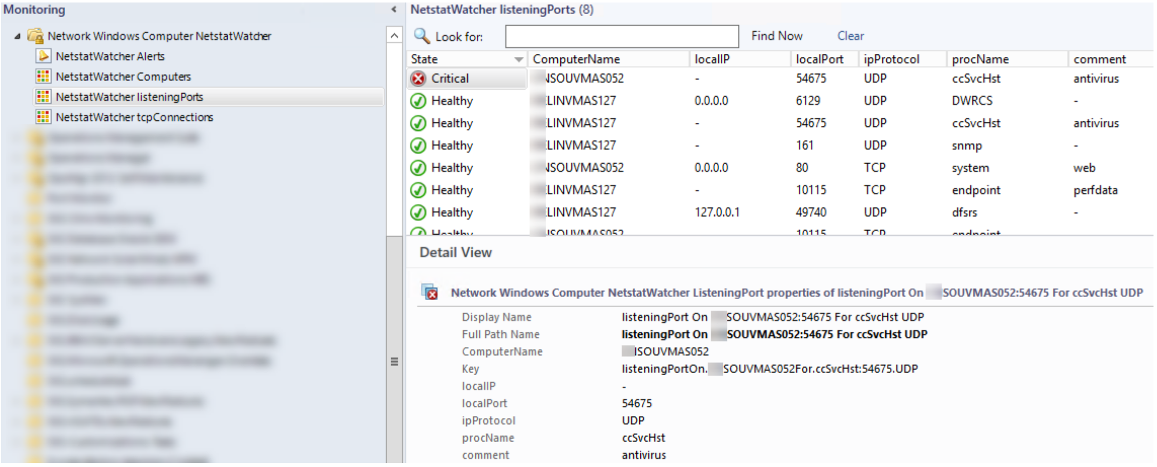
Monitors are for finding out which Health State an object has. – An object

- Monitor.tcpConnection targets all objects of the class Network.Windows.Computer.NetstatWatcher.TcpConnection
- Monitor.listeningPort targets all objects of the class Network.Windows.Computer.NetstatWatcher.ListeningPort

This monitor here uses PowerShell script MonitorNetstatWatcherItems.ps1 to determine the state of object. (See above: Interpreting output and initiate reaction) Interval is every 5 minutes.

Views

To make all discovered objects and their health state visible a state views are used.



Monitoring

- Network Windows Computer NetstatWatcher
  - NetstatWatcher Alerts
  - NetstatWatcher Computers
  - NetstatWatcher listeningPorts
  - NetstatWatcher tcpConnections

[redacted]

NetstatWatcher listeningPorts (8)

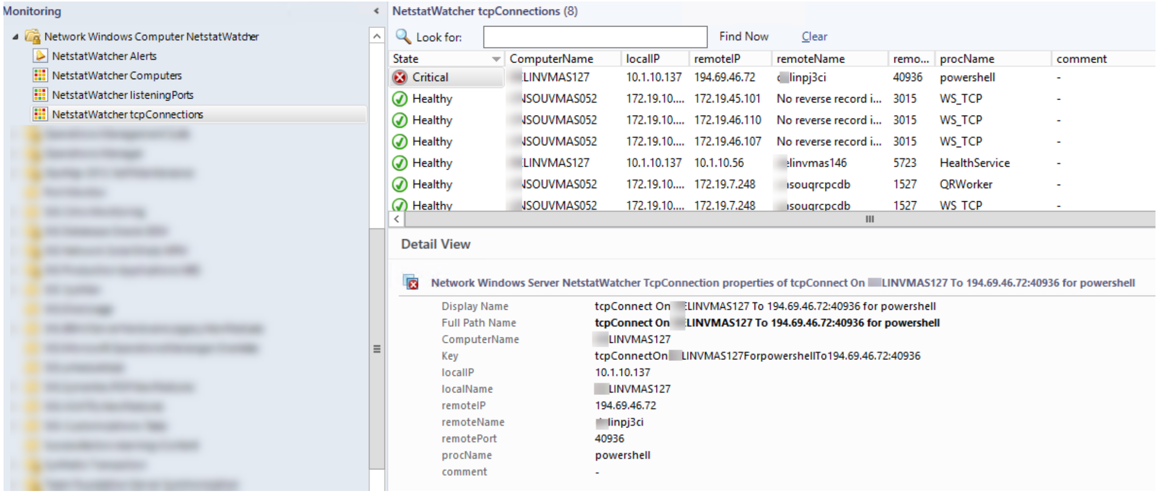
State	ComputerName	localIP	localPort	ipProtocol	procName	comment
Critical	[redacted]SOUVMAS052	-	54675	UDP	ccSvcHst	antivirus
Healthy	[redacted]LINVMAS127	0.0.0.0	6129	UDP	DWRCS	-
Healthy	[redacted]LINVMAS127	-	54675	UDP	ccSvcHst	antivirus
Healthy	[redacted]LINVMAS127	-	161	UDP	snmp	-
Healthy	[redacted]SOUVMAS052	0.0.0.0	80	TCP	system	web
Healthy	[redacted]LINVMAS127	-	10115	TCP	endpoint	perfdata
Healthy	[redacted]LINVMAS127	127.0.0.1	49740	UDP	dfsrs	-
Healthy	[redacted]SOUVMAS052		10115	TCP	endpoint	

Detail View

Network Windows Computer NetstatWatcher ListeningPort properties of listeningPort On [redacted]SOUVMAS052:54675 For ccSvcHst UDP

Display Name	listeningPort On [redacted]SOUVMAS052:54675 For ccSvcHst UDP
Full Path Name	**listeningPort On [redacted]SOUVMAS052:54675 For ccSvcHst UDP**
ComputerName	[redacted]SOUVMAS052
Key	listeningPortOn.[redacted]SOUVMAS052For.ccSvcHst:54675.UDP
localIP	-
localPort	54675
ipProtocol	UDP
procName	ccSvcHst
comment	antivirus

stateview showing listeningPorts



Monitoring

- Network Windows Computer NetstatWatcher
  - NetstatWatcher Alerts
  - NetstatWatcher Computers
  - NetstatWatcher listeningPorts
  - NetstatWatcher tcpConnections

[redacted]

NetstatWatcher tcpConnections (8)

State	ComputerName	localIP	remoteIP	remoteName	remo...	procName	comment
Critical	[redacted]LINVMAS127	10.1.10.137	194.69.46.72	[redacted]linpj3ci	40936	powershell	-
Healthy	[redacted]SOUVMAS052	172.19.10....	172.19.45.101	No reverse record i...	3015	WS_TCP	-
Healthy	[redacted]SOUVMAS052	172.19.10....	172.19.46.110	No reverse record i...	3015	WS_TCP	-
Healthy	[redacted]SOUVMAS052	172.19.10....	172.19.46.107	No reverse record i...	3015	WS_TCP	-
Healthy	[redacted]LINVMAS127	10.1.10.137	10.1.10.56	[redacted]linvmas146	5723	HealthService	-
Healthy	[redacted]SOUVMAS052	172.19.10....	172.19.7.248	[redacted]sougrcpcdb	1527	QRWorker	-
Healthy	[redacted]SOUVMAS052	172.19.10....	172.19.7.248	[redacted]sougrcpcdb	1527	WS_TCP	-

Detail View

Network Windows Server NetstatWatcher TcpConnection properties of tcpConnect On [redacted]LINVMAS127 To 194.69.46.72:40936 for powershell

Display Name	tcpConnect On [redacted]LINVMAS127 To 194.69.46.72:40936 for powershell
Full Path Name	**tcpConnect On [redacted]LINVMAS127 To 194.69.46.72:40936 for powershell**
ComputerName	[redacted]LINVMAS127
Key	tcpConnectOn[redacted]LINVMAS127ForpowershellTo194.69.46.72:40936
localIP	10.1.10.137
localName	[redacted]LINVMAS127
remoteIP	194.69.46.72
remoteName	[redacted]linpj3ci
remotePort	40936
procName	powershell
comment	-

stateview showing tcpConnections

Alerts are created if a port is not listening or a connection is lost. Those are shown in the 'NetstatWatcher Alerts' view.

Conclusion

You can download the management pack with the extensions .xml or. mpb. I published the software under GNU General Public License. Feel free to use it without costs or obligations. The software is provided "as is" without express or implied warranty.

If you don’t like the naming used, feel free to change the text in the XML file. Make sure that your search with case sensitivity. I used Visual Studio 2015 with Authoring Extensions for this management pack. Feel free to use the sources I published on Github.

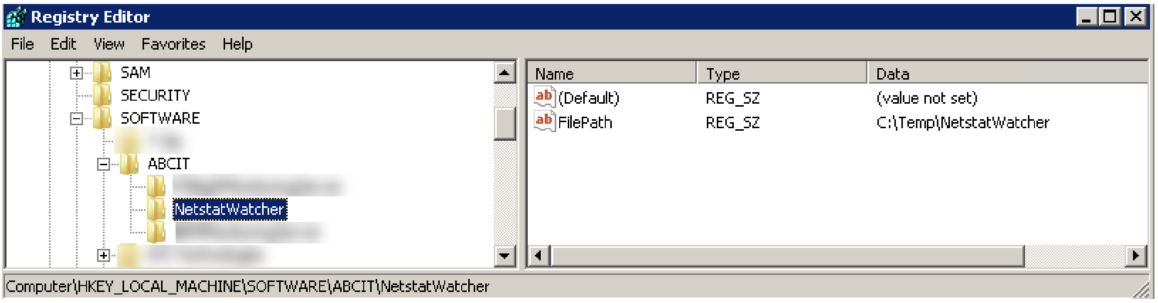
Setup Guide

If you like the to monitor **listening ports** or **tcp connecitons** on a computer, follow these 2 / 3 steps:

1. Open notepad and copy the following text into a text file, rename it as *.reg and import it to the registry via double click:

```
Windows Registry Editor Version 5.00
[HKEY_LOCAL_MACHINE\SOFTWARE\ABCIT\NetstatWatcher]
"FilePath"="C:\\Temp\\NetstatWatcher"
```

It will look like this in the registry:



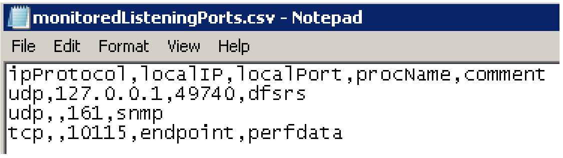
Name	Type	Data
(Default)	REG_SZ	(value not set)
FilePath	REG_SZ	C:\Temp\NetstatWatcher

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\ABCIT\NetstatWatcher

2. If you like to monitor listening ports, open notepad and create a text file named **monitoredListeningPorts.csv** in the path you have defined in the registry under ‘FilePath’. For example with the following content:

```
ipProtocol,localIP,localPort,procName,comment
udp,127.0.0.1,49740,dfsrs
udp,,161,snmp
tcp,,10115,endpoint,perfdata
```

It will look like this in notepad:

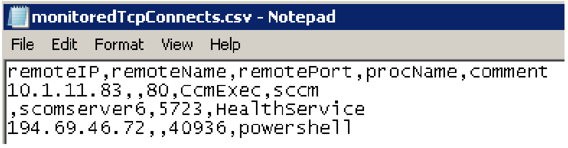


```
ipProtocol,localIP,localPort,procName,comment
udp,127.0.0.1,49740,dfsrs
udp,,161,snmp
tcp,,10115,endpoint,perfdata
```

3. If you like to tcp connections, open notepad and create a text file named **monitoredTcpConnects.csv** in the path you have defined in the registry under ‘FilePath’. For example with the following content:

```
remoteIP,remoteName,remotePort,procName,comment
10.1.11.83,,80,CcmExec,sccm
,scomserver6,5723,HealthService
194.69.46.72,,40936,powershell
```

It will look like this in notepad:



monitoredTcpConnects.csv - Notepad
File Edit Format View Help

```
remoteIP,remoteName,remotePort,procName,comment
10.1.11.83,,80,CcmExec,sccm
,scomserver6,5723,HealthService
194.69.46.72,,40936,powershell
```