Creating an Action Profile to Start Any Windows Service

Overview

This article describes how to create a single Action Profile that can start various Windows Services when Uptime Infrastructure Monitor observes that a Windows Service has stopped.

Background

Alerts and Actions can be triggered in Uptime Infrastructure Monitor when an Element changes state. This is discussed in the Uptime Infrastructure Monitor Administrator's Guide here: Alerts and Actions. Several actions are available out-of-the-box: Log to File, Recovery Script, Windows Service and SNMP trap.

The Windows Service action can Start, Stop or Restart a Windows Service identified by name. This is useful when you've created a Service Monitor using the Windows Service Check monitor to watch for a state change with a specific Windows Service. A typical scenario would be to set a Critical Status if a specified Windows Service is Stopped. In this case the Windows Service action in Uptime Infrastructure Monitor could be used to automatically try to start the Windows Service in an attempt to minimize service disruption.

The limitation to leveraging the Windows Service action on an Action Profile is that the Windows Service to be started must be identified by name. If you have a large number of Windows Services that could drive an action you will need to create a new Action Profile for each Windows Service and ensure you tie it to the correct Service Monitor. In environments where the number of Windows Services that fit this scenario is small this works well. However, in larger environments where the number of Windows Services that fit this scenario is large it might be desirable to create a single Action Profile that can restart any Windows Service.

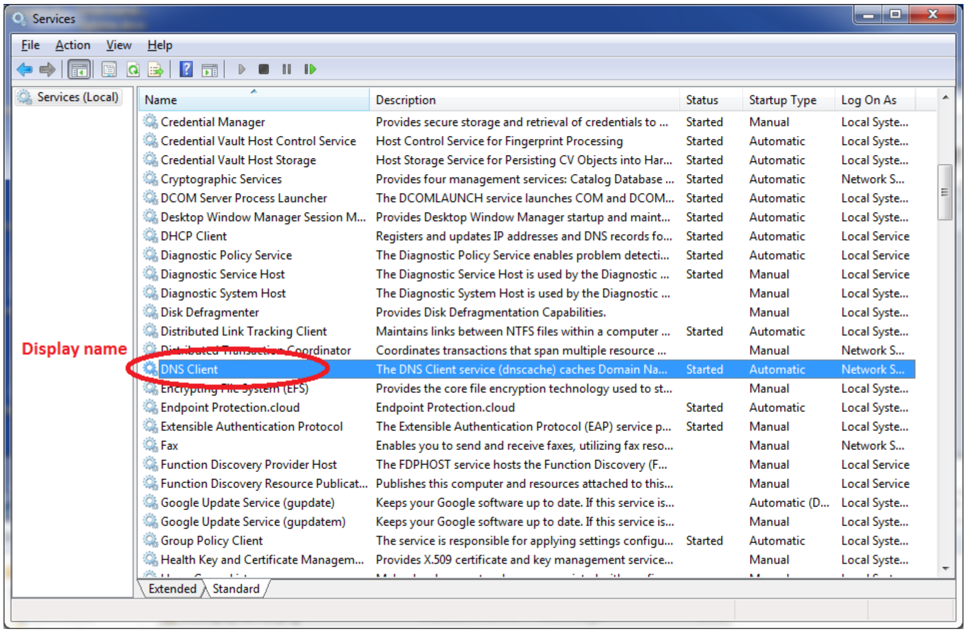
This article explores how to restart any Windows Service with an Action Profile as an alternative to creating a specific Action Profile for each Windows Service.

Create a Service Monitor

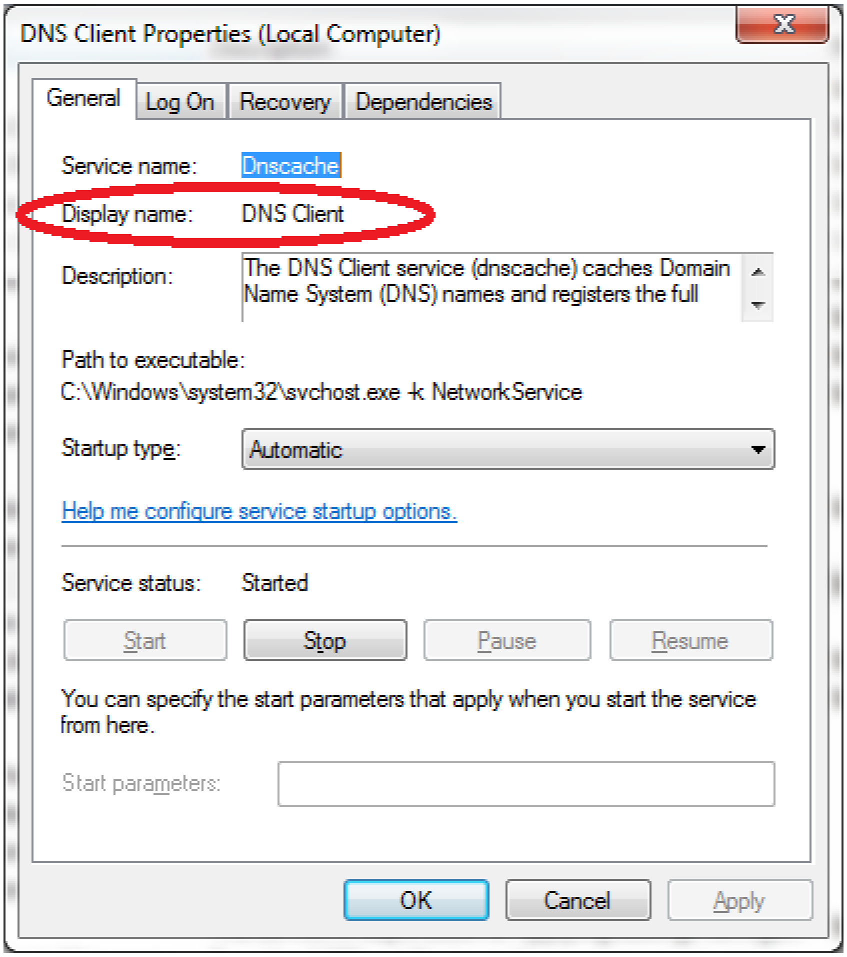
Start by creating a Service Monitor as follows:

- Create a Service Monitor selecting the Windows Service Check monitor.

> IMPORTANT: You must match the Service Name to the Windows Service Display Name. This name will be leveraged later to select the Windows Service to start.
> Note that Microsoft has both a Display Name and a Service Name. We want the Display Name (see the images that follow).



Name	Description	Status	Startup Type	Log On As
Credential Manager	Provides secure storage and retrieval of credentials to ...	Started	Manual	Local Syste...
Credential Vault Host Control Service	Host Control Service for Fingerprint Processing	Started	Automatic	Local Syste...
Credential Vault Host Storage	Host Storage Service for Persisting CV Objects into Har...	Started	Automatic	Local Syste...
Cryptographic Services	Provides four management services: Catalog Database ...	Started	Automatic	Network S...
DCOM Server Process Launcher	The DCOMLAUNCH service launches COM and DCOM...	Started	Automatic	Local Syste...
Desktop Window Manager Session M...	Provides Desktop Window Manager startup and maint...	Started	Automatic	Local Syste...
DHCP Client	Registers and updates IP addresses and DNS records fo...	Started	Automatic	Local Service
Diagnostic Policy Service	The Diagnostic Policy Service enables problem detecti...	Started	Automatic	Local Service
Diagnostic Service Host	The Diagnostic Service Host is used by the Diagnostic ...	Started	Manual	Local Service
Diagnostic System Host	The Diagnostic System Host is used by the Diagnostic ...		Manual	Local Syste...
Disk Defragmenter	Provides Disk Defragmentation Capabilities.		Manual	Local Syste...
Distributed Link Tracking Client	Maintains links between NTFS files within a computer ...	Started	Automatic	Local Syste...
Distributed Transaction Coordinator	Coordinates transactions that span multiple resource ...		Manual	Network S...
DNS Client	The DNS Client service (dnscache) caches Domain Na...	Started	Automatic	Network S...
Encrypting File System (EFS)	Provides the core file encryption technology used to st...		Manual	Local Syste...
Endpoint Protection.cloud	Endpoint Protection.cloud	Started	Automatic	Local Syste...
Extensible Authentication Protocol	The Extensible Authentication Protocol (EAP) service p...	Started	Manual	Local Syste...
Fax	Enables you to send and receive faxes, utilizing fax reso...		Manual	Network S...
Function Discovery Provider Host	The FDPHOST service hosts the Function Discovery (F...		Manual	Local Service
Function Discovery Resource Publicat...	Publishes this computer and resources attached to this...		Manual	Local Service
Google Update Service (gupdate)	Keeps your Google software up to date. If this service is...		Automatic (D...	Local Syste...
Google Update Service (gupdatem)	Keeps your Google software up to date. If this service is...		Manual	Local Syste...
Group Policy Client	The service is responsible for applying settings configu...	Started	Automatic	Local Syste...
Health Key and Certificate Managem...	Provides X.509 certificate and key management service...		Manual	Local Syste...



Service name: Dnscache

Display name: DNS Client

Description: The DNS Client service (dnscache) caches Domain Name System (DNS) names and registers the full

Path to executable:
C:\Windows\system32\svchost.exe -k NetworkService

Startup type: Automatic

Help me configure service startup options.

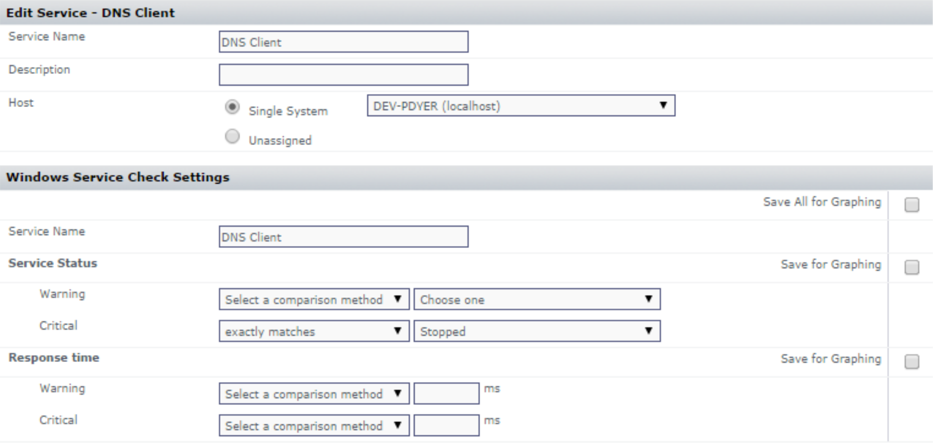
Service status: Started

You can specify the start parameters that apply when you start the service from here.

Start parameters:

- Complete the remainder of the Service Monitor making sure the Windows Service - Service Name is also the Display Name.
- Raise a Critical Alert when the Status is Stopped.

- Your Service Monitor should look something like the image that follows.



Edit Service - DNS Client

Service Name	DNS Client		
Description			
Host	● Single System ○ Unassigned	DEV-PDYER (localhost)	

Windows Service Check Settings

		Save All for Graphing	□
Service Name	DNS Client		
Service Status		Save for Graphing	□
Warning	Select a comparison method	Choose one	
Critical	exactly matches	Stopped	
Response time		Save for Graphing	□
Warning	Select a comparison method	ms	
Critical	Select a comparison method	ms	

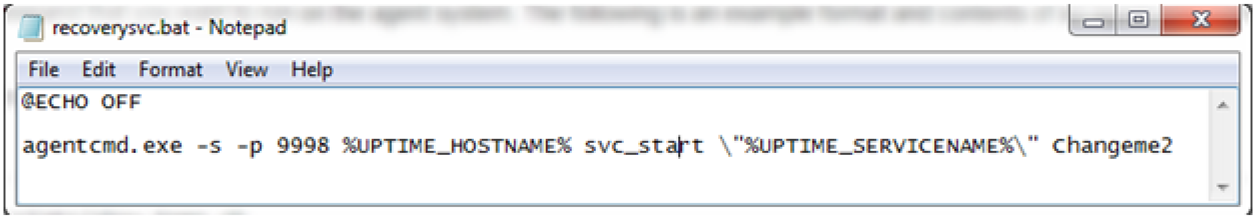
Create Recovery Script

We are going to leverage a Recovery Script in an Action Profile to Start the Windows Service. This will be a very simple script. We are going to leverage two key components built into Uptime Infrastructure Monitor:

- First, the ability to create a script on the Uptime Infrastructure Monitor Monitoring Station that directs an Uptime Infrastructure Monitor Agent to perform an action. In fact, the Uptime Infrastructure Monitor Agent exposes a method to the Uptime Infrastructure Monitor Monitoring Station to Start a Window Service – we simply have to supply the Windows Service name.
- Second, the use of Recovery Script Variables (variables available when creating Recovery Scripts). These are variables handed into our script by Uptime Infrastructure Monitor.

Here is what the Recovery Script looks like:

```
@ECHO OFF
agentcmd.exe -s -p 9998 %UPTIME_HOSTNAME% svc_start \"%UPTIME_SERVICENAME%\" Changeme2
```



```
@ECHO OFF
agentcmd.exe -s -p 9998 %UPTIME_HOSTNAME% svc_start \"%UPTIME_SERVICENAME%\" Changeme2
```

Some items to note:

- %UPTIME_HOSTNAME% is the name of the system raising the Alert, also the system where the Windows Service will be restarted.
- %UPTIME_SERVICENAME% is the name of the Service Monitor we created earlier. Note that this is why we needed the Service Monitor name to match the Windows Service Display Name.
- The \" may look strange, this ensures the whole Windows Service name gets included regardless of spaces.
- Changeme2 is the Uptime Infrastructure Monitor Agent Password in this environment, your environment will differ.

This script is saved to the Scripts directory on the Uptime Infrastructure Monitor Monitoring Station (default: C:\Program Files\uptime software\uptime\scripts).

For the sake of brevity we will skip the remaining details. However, if you want more information you can find it online, here are two key articles:

Creating an Action Profile Recovery Script (for the purposes of this article focus on the Monitoring Station Script).

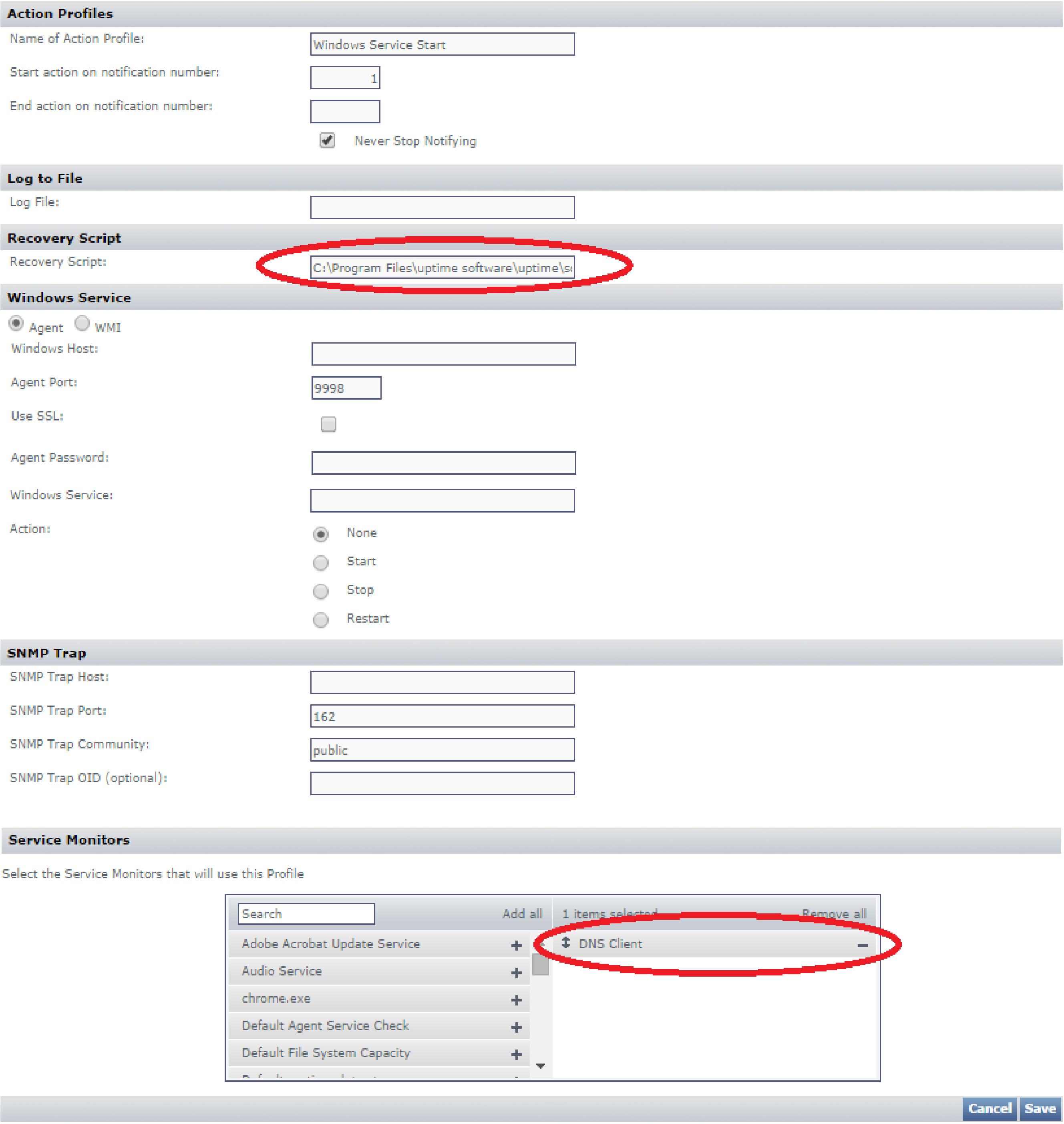
Alert Profile and Action Profile Variables (for the purposes of this article focus on the Recovery Script Variables):

Create an Action Profile

Lastly, we need to tie the Service Monitor and Recovery Script together in an Action Profile. Follow these steps:

- Create a new Action Profile and name it appropriately (no specific name is required).
- Populate the full path to the recovery script.
- Add the Service Monitor we created above.

It should look something like this:



Action Profiles

Name of Action Profile: Windows Service Start

Start action on notification number: 1

End action on notification number:

☑ Never Stop Notifying

Log to File

Log File:

Recovery Script

Recovery Script: C:\Program Files\uptime software\uptime\s(

Windows Service

● Agent ○ WMI

Windows Host:

Agent Port: 9998

Use SSL: □

Agent Password:

Windows Service:

Action: ● None ○ Start ○ Stop ○ Restart

SNMP Trap

SNMP Trap Host:

SNMP Trap Port: 162

SNMP Trap Community: public

SNMP Trap OID (optional):

Service Monitors

Select the Service Monitors that will use this Profile

Search
Add all
Adobe Acrobat Update Service +
Audio Service +
chrome.exe +
Default Agent Service Check +
Default File System Capacity +
1 items selected
Remove all
DNS Client −
Cancel
Save

Testing

The final test is to make sure that everything works as expected. Testing is as simple as stopping the Windows Service from your Service Monitor. You may want to adjust the Timing Settings on the Service Monitor to trigger the action sooner for the purposes of testing.

If you are familiar with Action Profiles you may know that Uptime Infrastructure Monitor has a built in Test Action Profile capability. However, that won't work in our case because the variables we are leveraging only get populated when a Service Monitor is triggered.

Notes

The Windows Service will be started in the security context of the Uptime Infrastructure Monitor agent running on the system where the Windows Service is being started (by default Local System).

This is only one way to accomplish this task, other viable options exist. You could create an Uptime Infrastructure Monitor Agent side script to perform the recovery, you could call a third party tool from the recovery script to start the service, etc, etc.