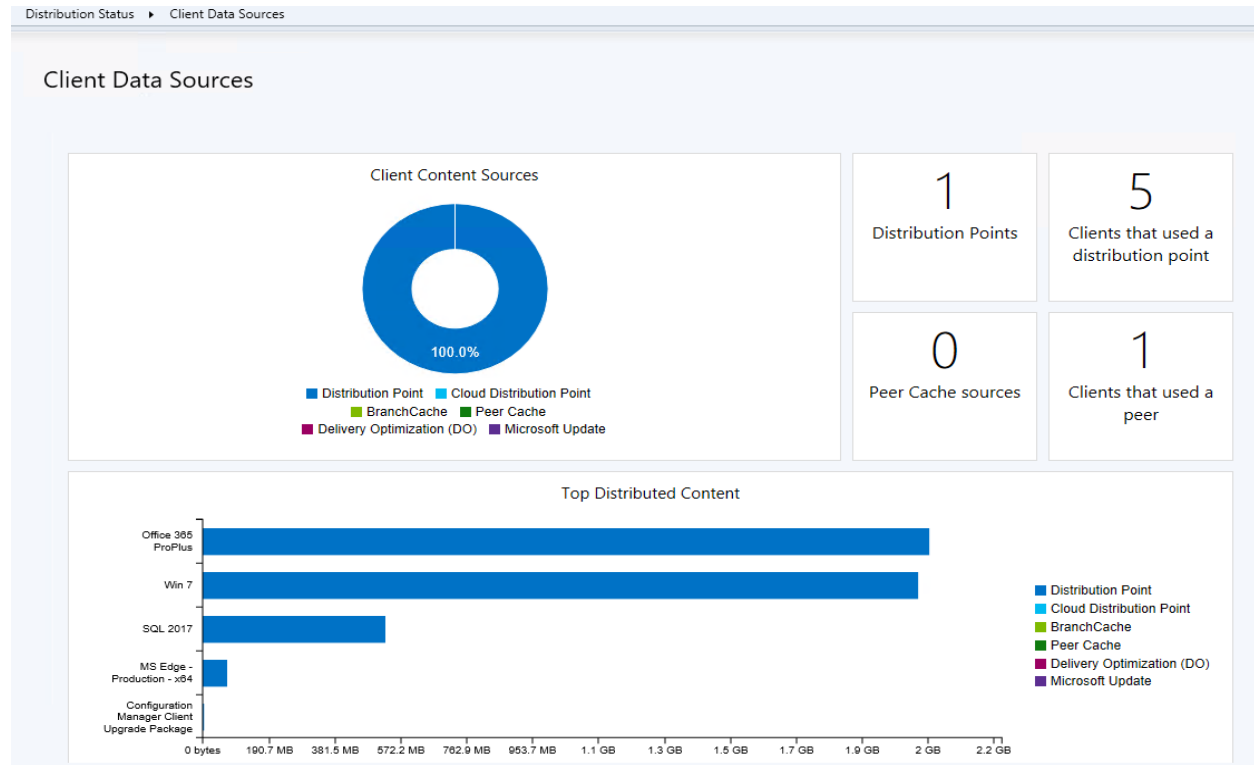# Implementing Branch Cache & Delivery Optimization – Current Branch 1910

In this post, I will show you how to setup DO.  Here is my current screen shot of client data sources.  Most of the data is downloaded from Primary DP.  I have not enabled CDP or BC or PC or DO.



What is DO?
Delivery Optimization (DO) has been around since the very first versions of Windows 10, but it has not been until recently (ConfigMgr 1802) that you find some integration between DO and ConfigMgr. DO is used whenever Windows 10 updates any of it's built-in universal apps, or when a user installs an application from either the Microsoft Store, or the Microsoft Store for Business. DO is also used for Software Updates when they are setup to use Express installation files.

Delivery Optimization is a peer to peer technology, meaning as soon as one Windows 10 client in a location got the content, it can share the content with other clients. Now, there is a ton of different configuration options for Delivery Optimizations, controlling how the peering works, the cache size allowed, and the bandwidth control. The options vary with the Windows 10 version. In general, as of now, I recommend you to be at least on Windows 10 v1709, but from a core DO point of view, you probably want to be on Windows 10 v1803

Like the BITS technology, Delivery Optimization also have the concept of foreground and background jobs. Foreground jobs in when a user starts a job, for example by installing an application from the Microsoft store. Background jobs are for example when Windows decides to update an application. In Windows 10 v1709 you can only set one bandwidth limit for both, but in Windows 10 v1803 you can configure bandwidth limits for background and foreground jobs independently.

Some nice features of DO is that is supports a distributed cache, meaning content is stored efficiently across multiple devices. It supports multitasking, as in support downloading from multiple sources, and it supports hybrid which means it can download from http and peer sources in parallel. Pretty cool.
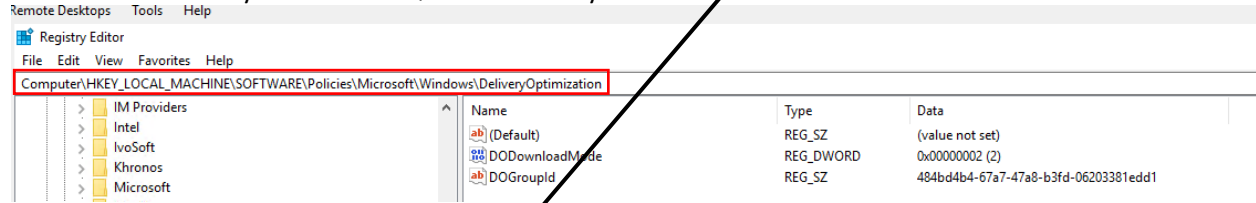
Open Default Client Settings Properties and complete the following.



Next is Delivery Optimization

Open Regedit – Check the GroupID - **484bd4b4-67a7-47a8-b3fd-06203381edd1**. You GroupID may be different. I have only one site so SQL will show only ONE.



Check the GroupID is same using this command **select * from vsms_boundarygroup**
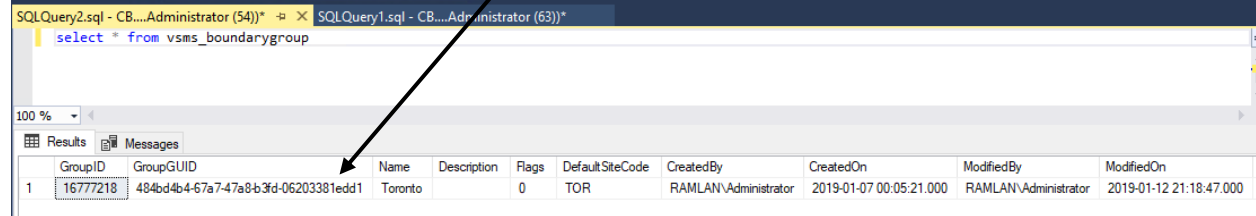


### GPO Setting for DO:

Computer Configuration - Administrative Templates -Windows Components -Delivery Optimization

## Download Mode

□ Download Mode      — □ ✕

□ Download Mode      [ Previous Setting ] [ Next Setting ]

○ Not Configured    Comment:

⦿ Enabled

○ Disabled

     Supported on:    At least Windows Server 2016, Windows 10

Options:          Help:

Download Mode:   [ Group (2)    ⌄ ]    Specifies the download method that Delivery Optimization can use in downloads of Windows Updates, Apps and App updates.
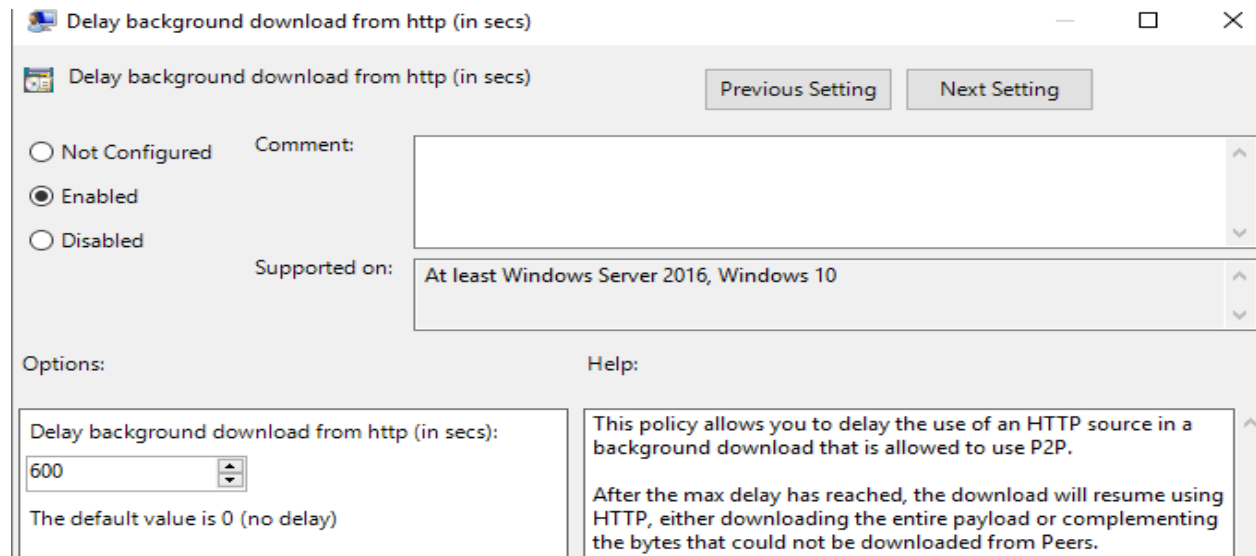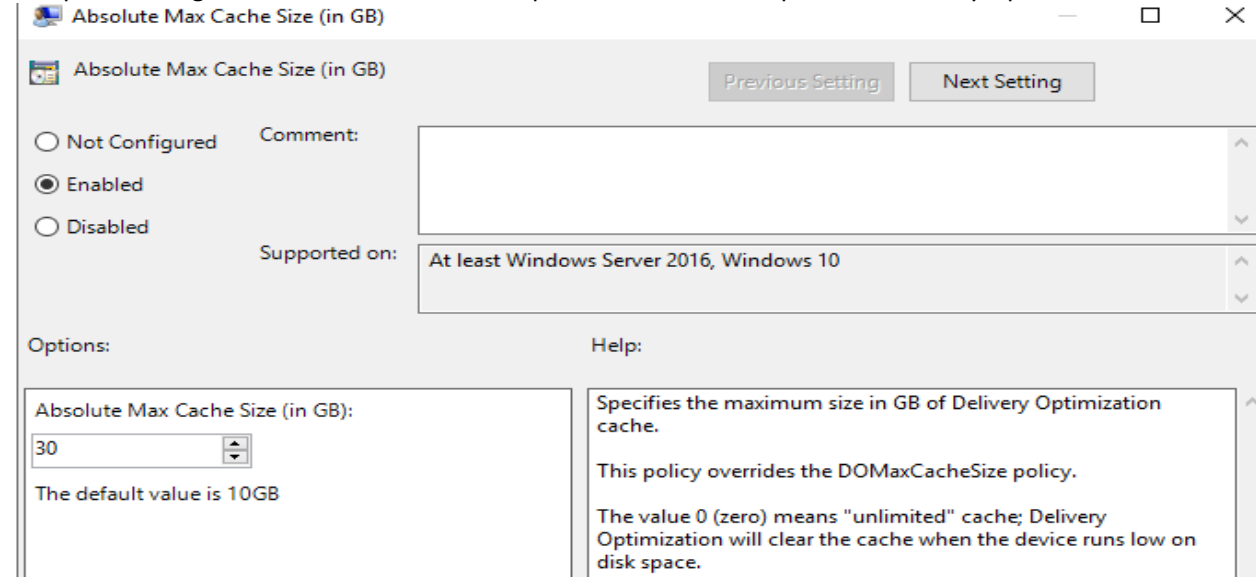
## Max Cache Age (in seconds)

□ Max Cache Age (in seconds)      — □ ✕

□ Max Cache Age (in seconds)      [ Previous Setting ] [ Next Setting ]

○ Not Configured    Comment:

⦿ Enabled

○ Disabled

     Supported on:    At least Windows Server 2016, Windows 10

Options:          Help:

Max Cache Age (in seconds):   [ 259200   ⯅⯆ ]    Specifies the maximum time in seconds that each file is held in the Delivery Optimization cache after downloading successfully.

## Allow uploads while the device is on battery while under set Battery level (percentage)

□ Allow uploads while the device is on battery while under set Battery level (percentage)      — □ ✕

□ Allow uploads while the device is on battery while under set Battery level (percentage)

[ Previous Setting ] [ Next Setting ]

○ Not Configured    Comment:

⦿ Enabled

○ Disabled

     Supported on:    At least Windows Server 2016, Windows 10

Options:          Help:

Minimum battery level (Percentage):    Specify any value between 1 and 100 (in percentage) to allow the device to upload data to LAN and Group peers while on DC power (Battery).

[ 40   ⯅⯆ ]

## Minimum Peer Caching Content File Size (in MB)

Minimum Peer Caching Content File Size (in MB)

[Previous Setting] [Next Setting]

○ Not Configured   Comment:
◉ Enabled
○ Disabled

Supported on: At least Windows Server 2016, Windows 10

Options:                                Help:

Minimum Peer Caching Content File Size (in MB):

1

Specifies the minimum content file size in MB enabled to use Peer Caching.

Recommended values: 1 MB to 100000 MB.

## Minimum RAM capacity (inclusive) required to enable use of Peer Caching (in GB)

Minimum RAM capacity (inclusive) required to enable use of Peer Caching (in GB)

[Previous Setting] [Next Setting]

○ Not Configured   Comment:
◉ Enabled
○ Disabled

Supported on: At least Windows Server 2016, Windows 10

Options:                                Help:

Minimum RAM capacity (inclusive) required to enable use of Peer Caching (in GB):

2

Specifies the minimum RAM size in GB required to use Peer Caching.

For example if the minimum set is 1 GB, then devices with 1 GB or higher available RAM will be allowed to use Peer caching.

## Select a method to restrict Peer Selection

Select a method to restrict Peer Selection

[Previous Setting] [Next Setting]

○ Not Configured   Comment:
◉ Enabled
○ Disabled
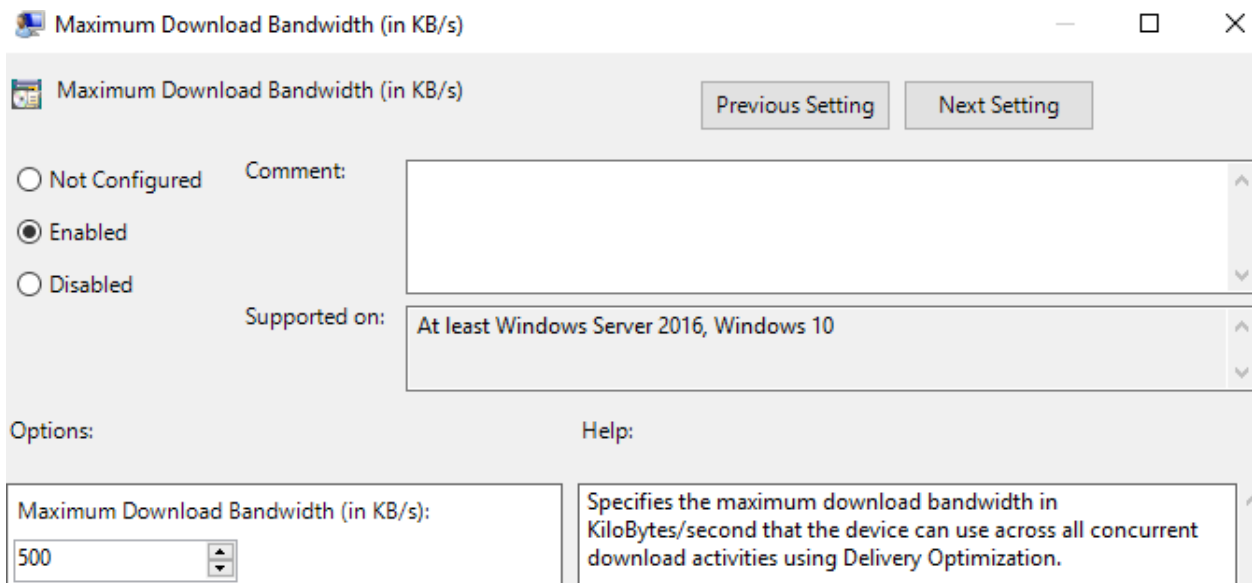
Supported on: At least Windows Server 2016, Windows 10
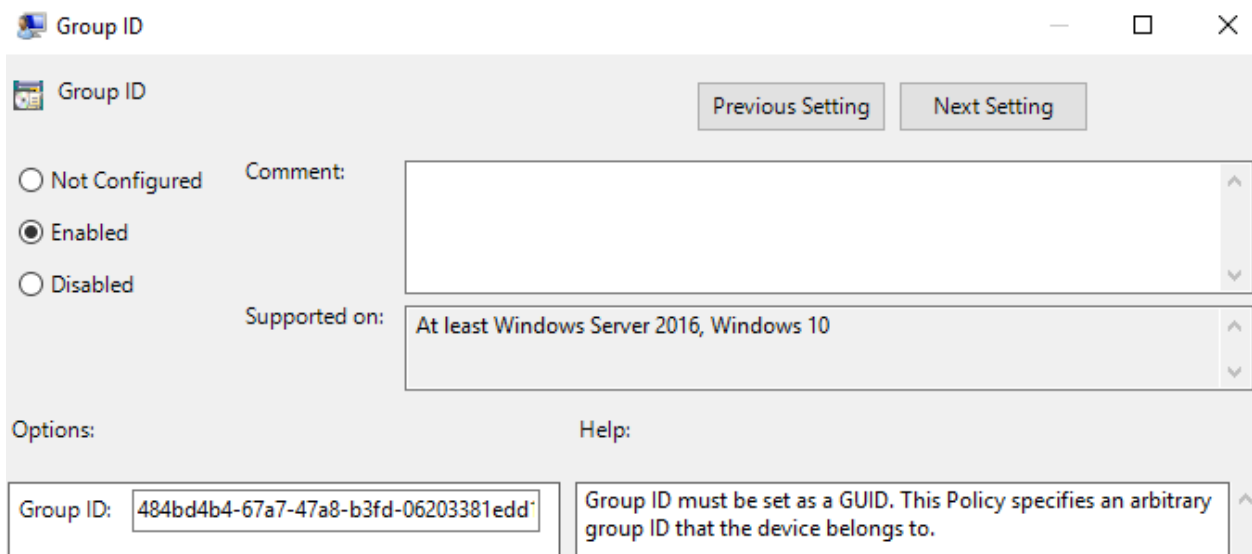
Options:                                Help:

Restrict Peer Selection By:   Subnet ▾

Set this policy to restrict peer selection via selected option.

Even though, I setup GroupID in the Console, I decided to include it in the GPO.



Now we have all the configuration in place. Let's test DO through PS command on Win 10 v1909 machine

Delete-DeliveryOptimizationCache
Get-DeliveryOptimizationLog
Get-DeliveryOptimizationPerfSnap
Get-DeliveryOptimizationPerfSnapThisMonth
Get-DeliveryOptimizationStatus
Get-DOConfig
Get-DODownloadMode
Get-DOPercentageMaxBackgroundBandwidth
Get-DOPercentageMaxForegroundBandwidth
Set-DeliveryOptimizationStatus
Set-DODownloadMode
Set-DOPercentageMaxBackgroundBandwidth
Set-DOPercentageMaxForegroundBandwidth

```
Administrator: Windows PowerShell

PS C:\WINDOWS\system32> Get-DeliveryOptimizationPerfSnap
There are no Delivery Optimization downloads to show PerfSnap data
PS C:\WINDOWS\system32> Get-DOConfig


DownloadMode                      : DownloadMode_Group
DownloadModeProvider              : MdmProvider
DownBackLimitPct                  : 100
DownBackLimitPctProvider          : Default
DownloadForegroundLimitPct        : 100
DownloadForegroundLimitPctProvider : Default
MaxUploadRatePct                  : 50
MaxUploadRateProvider             : Default
UploadLimitMonthlyGB              : 5120
UploadLimitMonthlyGBProvider      : Default



PS C:\WINDOWS\system32> Get-DODownloadMode
2
PS C:\WINDOWS\system32> Get-DOPercentageMaxBackgroundBandwidth
100
PS C:\WINDOWS\system32> Get-DOPercentageMaxForegroundBandwidth
100
PS C:\WINDOWS\system32> Get-DeliveryOptimizationPerfSnapThisMonth
MonthlyUploadLanBytes             : 0
MonthlyUploadInternetBytes        : 0
MonthlyDownloadHttpBytes          : 588,501,204
MonthlyDownloadLanBytes           : 0
MonthlyDownloadInternetBytes      : 0
MonthlyDownloadFgRateKbps         : 0
MonthlyDownloadBgRateKbps         : 8,145
MonthlyUploadLimitReached         : No
MonthStartDate                    : 2/1/2020
PS C:\WINDOWS\system32> Get-DeliveryOptimizationStatus
No active Delivery Optimization download or upload jobs
```

With this we have completed DO configuration.

Thanks

**Ram Lan**
**10th Feb 2020**