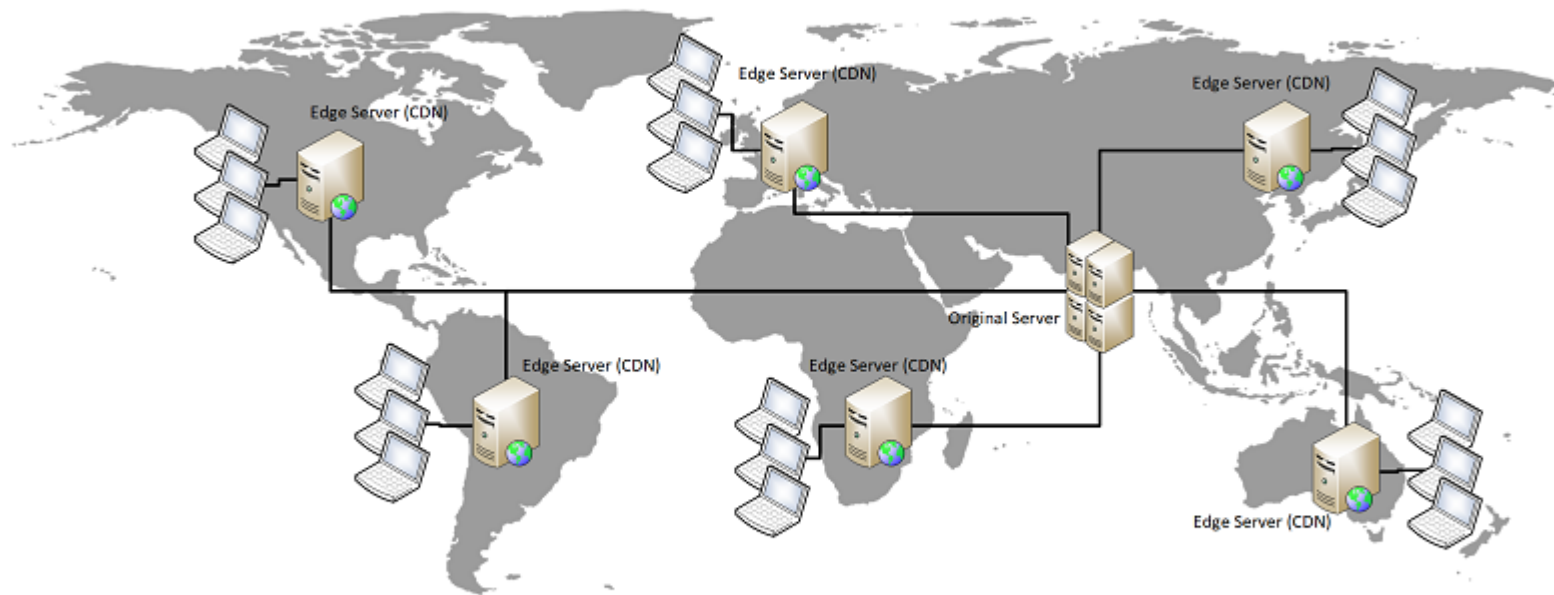


# Enable SharePoint Online CDN



All those who work with professional websites, Content Delivery Network (CDN) will say something, but still briefly explained. Every website has certain static content such as CSS, JPG, PNG or JS files that rarely change. When I visit the page, they are always loaded by the server. If I now have a long spatial distance to the server, this process takes a long time. Example: Server is located in Munich, client in San Francisco = high loading time, high latency.



*Client retrieves static content from Edge Servers. Edge Servers cache these from the original server. Content loads faster and reduces latency.*

A content delivery network like Akamai, Verizon, or Cloudflare have their own edge servers that pull content from another domain. It is already checked at DNS level in which location the client is located, where the closest Edge Server is located, which then delivers the above-mentioned files. This is then quickly by a factor of 10x faster!

Recently, SharePoint Online can do the same. That's what this article is about.

# Content Delivery Network (CDN) in Office 365

Microsoft recently announced in a blog the support of private and public CDN's. Since April 2017, this should be rolled out on all First Release Tenants, all others will follow. Here is the official message: <https://dev.office.com/blogs/general-availability-of-office-365-cdn>

Basically, you have to know that this is based on the publishing feature of SharePoint and is primarily designed for intranet scenarios.

## CDN Type

Microsoft distinguishes between two types, both of which can be activated at the same time:

### Public

In the CDN type Public, all public content is cached, i.e. it is sufficient to know the URL and call it from the SharePoint. This can also be used in SPFx solutions. It is not completely anonymous, because the call must be made via the referrer by SharePoint.

### Private

In the CDN type Private, content is cached via a dynamic link, i.e. the URL receives a token that is valid for one hour and is therefore dynamic. SharePoint always tries to issue the same token for authenticated users so that caching on the proxy still works.

## Configuration via PowerShell

The configuration can only be done via PowerShell, a complete PowerShell script is available here: <https://github.com/Hobmaier/Scripts/blob/master/CDN/SharePointOnlineCDN.ps1>

Otherwise, here is step by step:

## Sign in to SharePoint Online

```
#Change this line to your tenant URL prefix, e.g. in case abc.sharepoint.com it will be abc $tenant = 's2sshowcase'  
import-module microsoft.online.sharepoint.powershell get-command -Module  
Microsoft.Online.SharePoint.PowerShell Connect-SPOService -Url https://$tenant-admin.sharepoint.com
```

## Get Status

```
#Check current status (off by default)  
Get-SPOTenantCdnEnabled -CdnType Public  
Get-SPOTenantCdnEnabled -CdnType Private
```

## Enable configuration

```
#Enable CDN (public and private - see Blog for explanation)
Set-SPOTenantCdnEnabled -CdnType Public #Public CDN enabled
locations: #*/MASTERPAGE (configuration pending) #*/STYLE LIBRARY
(configuration pending) Set-SPOTenantCdnEnabled -CdnType Private
#Private CDN enabled locations: #*/USERPHOTO.ASPX (configuration
pending) #*/SITEASSETS (configuration pending)
```

*Status "(configuration pending)" can take up to 15 minutes until the configuration is actually active*

## Add lists libraries or folders to the CDN configuration

```
# Add new CDN origin, so a list, library, folder which should be cached within the CDN # * wildcard can be used in front, if
not list, library, folder must exist Add-SPOTenantCdnOrigin -CdnType Public -OriginUrl */Publishingimages
Add-SPOTenantCdnOrigin -CdnType Private -OriginUrl /sites/Publishing297/SalesDashboard #specific Library in specific
Site Collection
```

## Disable CDN

```
#Disable CDN in the tenant Set-SPOTenantCdnEnabled -CdnType Public -Enable $false #up to 24h until  
cache expires Set-SPOTenantCdnEnabled -CdnType Private -Enable $false #up to 1h until cache expires
```

## Analyse mit Browser Developer Tools

I like to use the Chrome Developer Tools (or IE) – via F12, then go to the Network tab.

In both cases, I have an example of:

- CDN.png = Public CreditCard
- Profile.jpg = Private Profile

Please check the URL and the loading time.

### Before

Here is the example of public:

BROWSE PAGE

Edit Page, Edit Properties, Versions, Permissions, E-mail a Link, Alert Me, Approve, Reject, Workflows, Edit Mobile Page, Make Homepage, Title Bar Properties, Tags & Notes

Edit, Manage, Share & Track, Approval, Workflow, Page Actions, Tags and Notes

Home

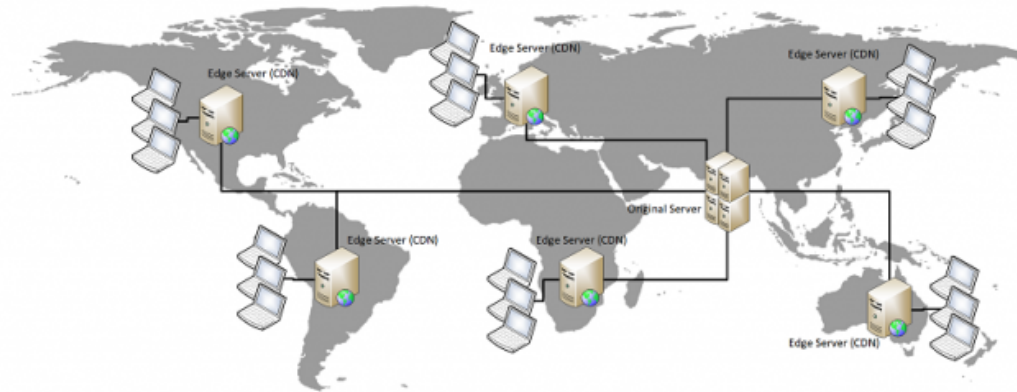
Home

Tasks

Image Viewer

Calendar

Site contents



F12 DOM Explorer Konsole Debugger Netzwerk Leistung Speicher Emulation

Inhaltstyp

Name / Pfad	Protokol	Methode	Ergebnis / Beschreibung	Inhaltstyp	Empfangen	Zeit	Initiator / Typ	0ms
https://s2sshowcase.sharepoint.com/_layouts/15/images/			OK					
searchresultui.png?rev=44 https://s2sshowcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	1,87 KB	56,74 ms	image	
CDN.png https://s2sshowcase.sharepoint.com/sites/Publishing297/PublishingImages/	HTTPS	GET	200 OK	image/png	110,41 KB	97,47 ms	image	
spcommon.png?rev=44	HTTPS	GET	200	image/png	18,8 KB	46,51 ms	image	

CDN.png needs 97,47 ms to load.

URL: <https://s2sshowcase.sharepoint.com/sites/Publishing297/PublishingImages/CDN.png>

And using the example of private individuals:

Name / Pfad	Protokol	Methode	Ergebnis / Beschreibung	Inhaltstyp	Empfangen	Zeit	Initiator / Typ
favicon.ico?rev=44 https://s2sshowcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/x-icon	1,62 KB	179,06 ms	Dashboard.aspx:77 parsedElement
spcommon.png?rev=44 https://s2sshowcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	18,8 KB	250,18 ms	Dashboard.aspx:78 parsedElement
siteicon.png?rev=44 https://s2sshowcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	2,29 KB	252,02 ms	Dashboard.aspx:79 parsedElement
spcommon.png?rev=44 https://s2sshowcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	18,8 KB	250,31 ms	Dashboard.aspx:80 parsedElement
searchresultui.png?rev=44 https://s2sshowcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	1,87 KB	416,24 ms	Dashboard.aspx:473 parsedElement
CreditCard.jpg https://s2sshowcase.sharepoint.com/sites/Publishing297/SalesDashboard/	HTTPS	GET	200 OK	image/jpeg	2,59 MB	1,91 s	Dashboard.aspx:540 parsedElement
Td={m:[t:175130,l:1,ct:1501491073987,s:["true","true","true","true","true","false","false","true...]	HTTPS	GET	200 OK	image/gif	826 B	224,09 ms	image

Header Text Parameter Cookies Zeiten

Anforderungs-URL: https://s2sshowcase.sharepoint.com/sites/Publishing297/SalesDashboard/CreditCard.jpg

Anforderungsmethode: GET

Statuscode: 200 / OK

Anforderungsheader

Accept: image/png, image/svg+xml, image/jxr, image/\*; q=0.8, \*/\*; q=0.5

Accept-Encoding: gzip, deflate

Accept-Language: de-DE, de; q=0.8, en-US; q=0.5, en; q=0.3

Cache-Control: no-cache

Connection: Keep-Alive

Cookie: databaseBtnText=Mit%20Access%20%C3%B6ffnen; databaseBtnDe...

*CreditCard.jpg (2,6 MB) needs 1,91 s to load.*

**URL:** <https://s2sshowcase.sharepoint.com/sites/Publishing297/SalesDashboard/CreditCard.jpg>

## Afterwards

Name / Pfad	Protokol	Methode	Ergebnis / Beschreibung	Inhaltstyp	Empfangen	Zeit	Initiator / Typ	Oms
favicon.ico?rev=44 https://s2showcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/x-icon	1,62 KB	57,29 ms	image	
spcommon.png?rev=44 https://s2showcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	18,8 KB	82,16 ms	image	
siteicon.png?rev=44 https://s2showcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	2,29 KB	59,13 ms	image	
spcommon.png?rev=44 https://s2showcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	18,8 KB	82,59 ms	image	
searchresultui.png?rev=44 https://s2showcase.sharepoint.com/_layouts/15/images/	HTTPS	GET	200 OK	image/png	1,87 KB	57,69 ms	image	
CDN.png https://publiccdn.sharepointonline.com/s2showcase.sharepoint.com/sites/Publishing297/PublishingImages/	HTTP/2	GET	200 OK	image/png	110,41 KB	30,75 ms	image	
GetPersonPhoto?email=admin@s2showcase.onmicrosoft.com&UA=0&size=... https://outlook.office365.com/owa/Service.svc/s/	HTTPS	GET	200 OK	image/jpeg		81,06 ms	image	
userphoto.aspx?size=5&username=admin%40s2showcase.onmicrosoft.com https://s2showcase.sharepoint.com/_layouts/15/	HTTPS	GET	200 OK	image/jpeg	1,17 KB	513,79 ms	image	

Header Text Parameter Cookies Zeiten

Anforderungs-URL: https://publiccdn.sharepointonline.com/s2showcase.sharepoint.com/sites/Publishing297/PublishingImages/

Anforderungsmethode: GET

Statuscode: 200 /

Anforderungsheader

Accept: image/png, image/svg+xml, image/jxr, image/jpeg, image/gif, image/x-icon

Accept-Encoding: gzip, deflate

Accept-Language: de-DE, de; q=0.8, en-US; q=0.5, en-GB; q=0.4

DNT: 1

Host: publiccdn.sharepointonline.com

Referer: https://s2showcase.sharepoint.com/sites/Publishing297/PublishingImages/

User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; Trident/6.0; rv:11.0) like Gecko

Antwortheader

access-control-allow-origin: \*

CDN.png only needs 30,75 ms and HTTP/2. URL changes to CDN.

URL of publiccdn.sharepointonline.com (always the same prefix):

<https://publiccdn.sharepointonline.com/s2showcase.sharepoint.com/sites/Publishing297/PublishingImages/>

And using the example of private individuals:

Name / Pfad	Protokol	Methode	Ergebnis / Beschreibung	Inhaltstyp	Empfangen	Zeit	Initiator / Typ
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/sites/Publishing1/Assets/ClientLogPortal/office.com/UI/	HTTP/1.1	GET	200 OK	image/gif	1,62 KB	147,01 ms	Dashboard.aspx:77 parsedElement
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/_layouts/15/images/favicon.ico?rev=44	HTTPS	GET	200 OK	image/x-icon	1,62 KB	147,01 ms	Dashboard.aspx:77 parsedElement
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/_layouts/15/images/spocommon.png?rev=44	HTTPS	GET	200 OK	image/png	18,8 KB	112,87 ms	Dashboard.aspx:78 parsedElement
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/_layouts/15/images/siteicon.png?rev=44	HTTPS	GET	200 OK	image/png	2,29 KB	147,22 ms	Dashboard.aspx:79 parsedElement
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/_layouts/15/images/spocommon.png?rev=44	HTTPS	GET	200 OK	image/png	18,8 KB	127,75 ms	Dashboard.aspx:80 parsedElement
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/_layouts/15/images/searchresultui.png?rev=44	HTTPS	GET	200 OK	image/png	1,87 KB	218,26 ms	Dashboard.aspx:473 parsedElement
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/sites/Publishing1/SalesDashboards/CreditCard.jpg?_eat_=1501491469_35275883c7ea3a5bccdc280c3f7f9e39a7cbabffa589cb034a19388a4e82634&_oat_=15014	HTTP/2	GET	200 OK	image/jpeg	2,59 MB	628,17 ms	Dashboard.aspx:540 parsedElement
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/sites/Publishing1/SalesDashboards/7d= m t 175130 l ct 1501488930585 a true,true,true,true,true,false,false,true...	HTTPS	GET	200 OK	image/gif	826 B	70,93 ms	image
https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/sites/Publishing1/SalesDashboards/7d= m t 175167 l ct 1501488932187 a https%3A%252F%252F1.res.office365.com%252F...	HTTPS	GET	200 OK	image/gif	826 B	82,78 ms	image

*CreditCard.jpg (2,6 MB) only needs 628,17 ms and HTTP/2. URL changes to CDN.*

*URL of privatecdn.sharepointonline.com (incl. token valid for one hour):*

*https://privatecdn.sharepointonline.com/s2sshowcase.sharepoint.com/sites/Publishing297/SalesDashboard/\_eat\_=1501491469\_35275883c7ea3a5bccdc280c3f7f9e39a7cbabffa589cb034a19388a4e82634&\_oat\_=15014*

## URL Rewriting

Basically, an automatic URL rewriting works, but only on publishing pages, so the publishing feature must be activated. In an intranet, however, this is usually already active, so that the integration runs smoothly and at most additional folders have to be included (Origin).

Here is a short checklist of what you have to consider so that content is also cached:

- Major Version (1.0, 2.0...) Pages, images, scripts published Checked in Publishing
- Page Uncheck single item from cache
- 
- 
- Check out item
- Minor Version (1.1, 1.2, 1.3,... )
- Query String anfügen: ? NoAutoReWrites=true