

Matrix42

Empirum

Peer Download Configuration

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1. General information

To save download time and network resources, clients can retrieve required packages from clients nearby instead from a subdepot or the main server. Ideally you don't need a subdepot at all any longer.

We are using Microsoft's BranchCache. The complete documentation can be found on [https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-7/dd637832\(v=ws.10\)](https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-7/dd637832(v=ws.10))

To establish a communication from client to server using BranchCache you have to take some manual preparations and install the package "Matrix42 Peer Download Server Configuration" on the server and "Matrix42 Peer Download Client Configuration" for the clients.

2. Configuration

2.1. Configure the network environment

To use BranchCache, you need to make sure your network is in broadcast domains. This is necessary because only the computer within that broadcast domain can provision and exchange data through BranchCache. The only exception is the master server, which does not have to be part of this broadcast domain.

2.2. Set up the server group policy

To use BranchCache, the following group policies must be configured on the server side. This requires a group policy object with the following settings:

- "Local Computer Policy" / "Computer Configuration" / "Administrative Templates" / "Network" / "BranchCache"
 - Turn On BranchCache
 - Set BranchCache Distributed Cache Mode
- "Local Computer Policy" / "Computer Configuration" / "Administrative Templates" / "Network" / "Lanman Server"
 - Hash Publication for BranchCache
 - Hash Publication Actions must be 0

Further information can be found [here](#).



Warning:

The name of the group policy object must contain the string "BranchCache".

2.3. Set up the client group policy

To use BranchCache, the following group policies must be configured on the client side. This requires a group policy object with the following settings:

- "Local Computer Policy" / "Computer Configuration" / "Administrative Templates" / "Network" / "BranchCache"
 - Turn On BranchCache
 - Set BranchCache Distributed Cache Mode
 - Configure BranchCache for network files
 - Set the maximum round trip network latency to 0

Further information can be found [here](#).

2.4. Distribute the client and server package

If you have not already done so, import the enclosed packages "Matrix42 Peer Download Client Configuration" and "Matrix42 Peer Download Client Configuration". Assign these to your master or depot server or to the clients for which a distributed download is to be activated.

The group policies required for BranchCache can neither be set automatically by package nor by agent and must therefore first be distributed manually by the system administrator using the group policy object. If these policies are not set, the installation is aborted and the administrator receives an error message.

The server package will then install the Windows BranchCache feature, configure the firewall, and set up file sharing.

The client package will configure the firewall.



Note:

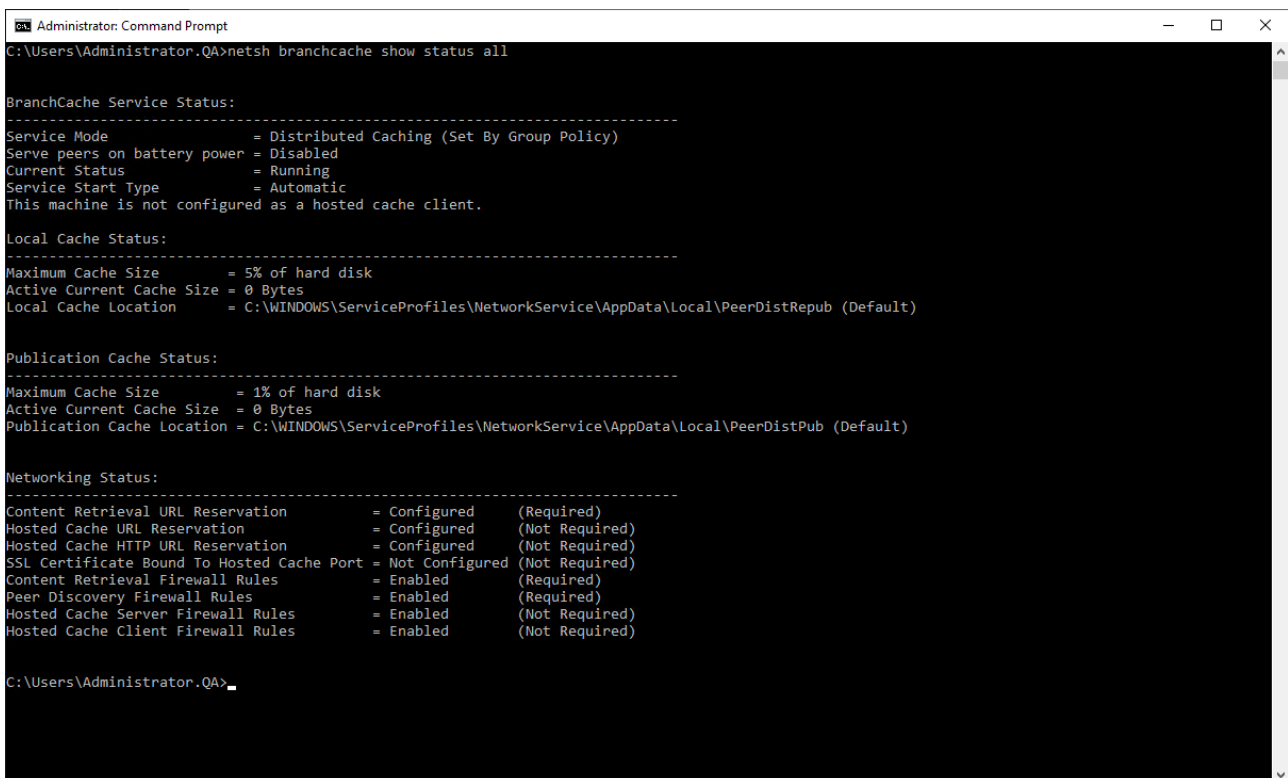
The client package needs a reboot after a successful installation.

3. Troubleshooting

If the BranchCache does not work as expected after setup, there are some ways to determine the cause.

3.1. Check if BranchCache is enabled

At the command prompt, enter the command `netsh branchcache show status all`. The output should look something like this:



```
Administrator: Command Prompt
C:\Users\Administrator.QA>netsh branchcache show status all

BranchCache Service Status:
-----
Service Mode           = Distributed Caching (Set By Group Policy)
Serve peers on battery power = Disabled
Current Status         = Running
Service Start Type     = Automatic
This machine is not configured as a hosted cache client.

Local Cache Status:
-----
Maximum Cache Size     = 5% of hard disk
Active Current Cache Size = 0 Bytes
Local Cache Location   = C:\WINDOWS\ServiceProfiles\NetworkService\AppData\Local\PeerDistRepub (Default)

Publication Cache Status:
-----
Maximum Cache Size     = 1% of hard disk
Active Current Cache Size = 0 Bytes
Publication Cache Location = C:\WINDOWS\ServiceProfiles\NetworkService\AppData\Local\PeerDistPub (Default)

Networking Status:
-----
Content Retrieval URL Reservation      = Configured      (Required)
Hosted Cache URL Reservation          = Configured      (Not Required)
Hosted Cache HTTP URL Reservation     = Configured      (Not Required)
SSL Certificate Bound To Hosted Cache Port = Not Configured  (Not Required)
Content Retrieval Firewall Rules      = Enabled         (Required)
Peer Discovery Firewall Rules         = Enabled         (Required)
Hosted Cache Server Firewall Rules    = Enabled         (Not Required)
Hosted Cache Client Firewall Rules    = Enabled         (Not Required)

C:\Users\Administrator.QA>
```

The following points are important:

- "Service Mode" = "Distributed Caching (Set by Group Policy)"
- "Current Status" = "Running"

3.2. Check group policies

Make sure the group policies are configured as described above.

3.3. Check firewall

The Windows Firewall is automatically adjusted on the systems by the corresponding packages. To check the rules, open the advanced settings of the Windows Firewall. The following rules should be activated:

3.3.1. Incoming rules

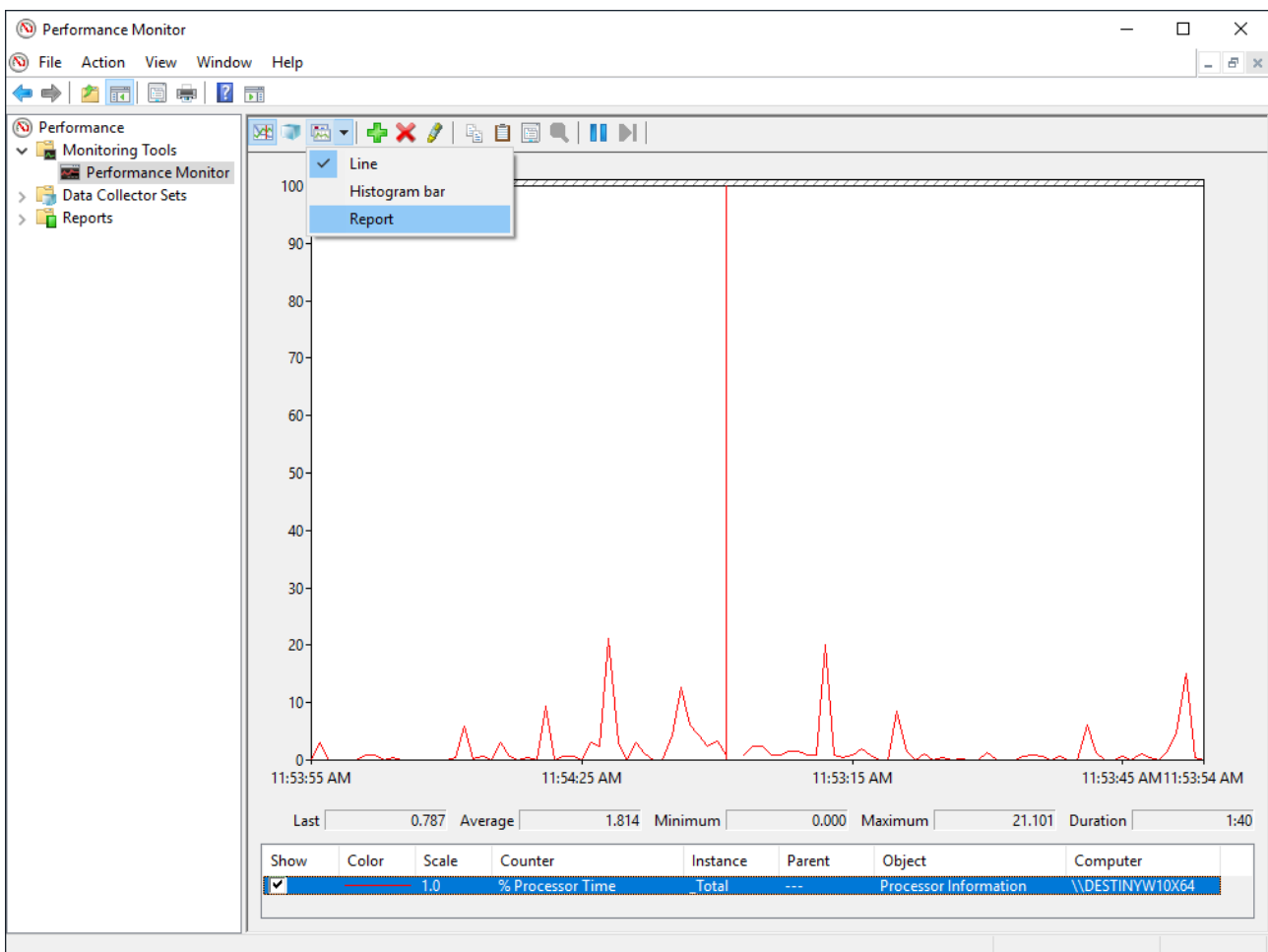
- BranchCache Content Retrieval (HTTP-In)
- BranchCache Peer Discovery (WSD-In)

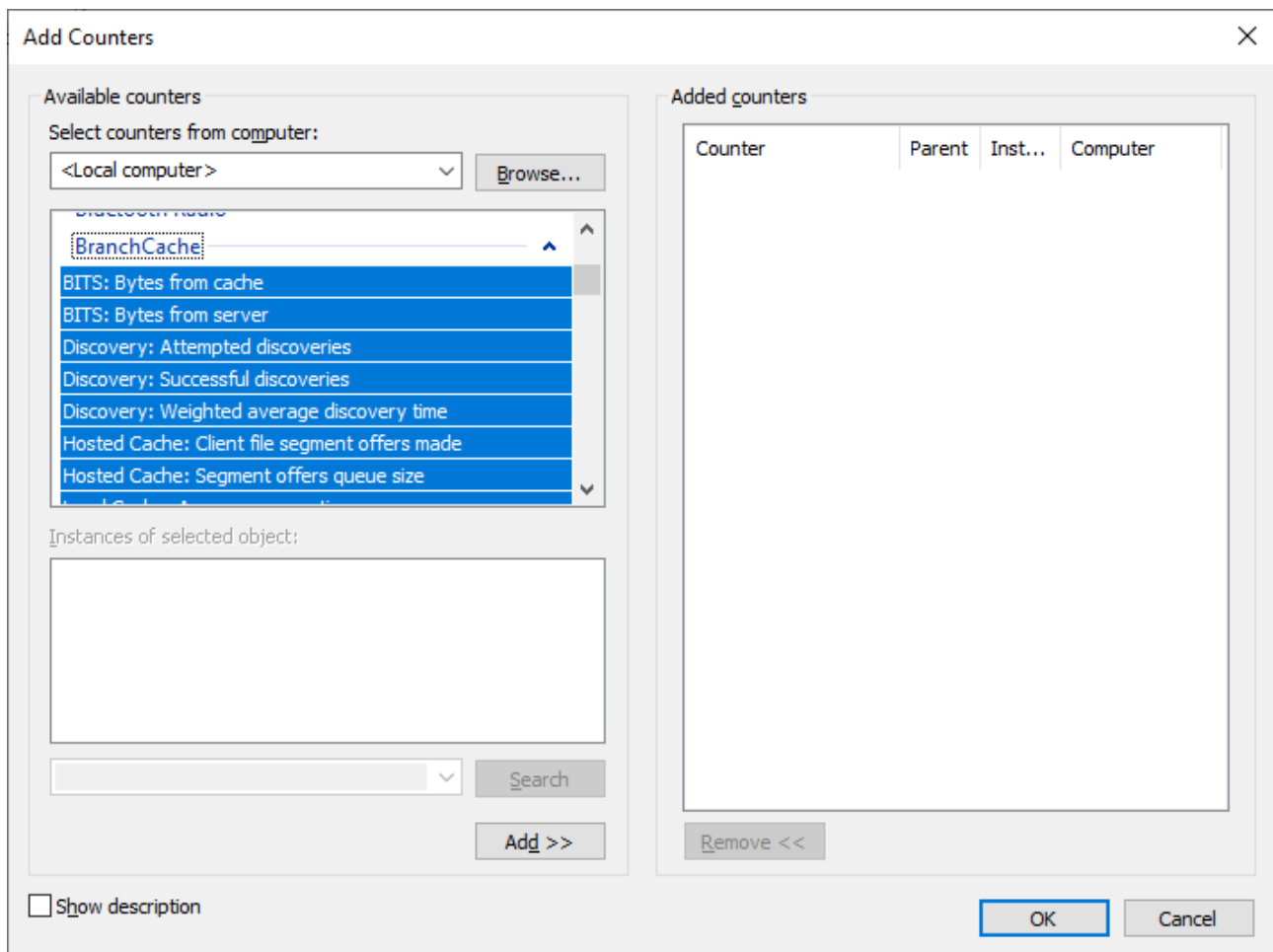
3.3.2. Outgoing rules

- BranchCache Content Retrieval (HTTP-Out)
- BranchCache Peer Discovery (WSD-Out)

3.4. Check usage with performance monitor

- Open performance monitoring on the client
- Change the "Graph Type" to "Report"
- Press the green plus and add a BranchCache performance counter





The Performance Monitor shows you how many bytes have been deployed or downloaded through BranchCache from server or other clients.

4. Uninstall

Uninstalling the packages ensures that the network traffic no longer takes place via BranchCache. No changes are made to installed software or the Windows firewall.

Since we cannot automatically detect and ensure that BranchCache is not used elsewhere in your environment (either before or after installing the Matrix42 packages), uninstalling the packages will by default only deny access to the Configurator\$ network share via BranchCache.

If you want to undo any changes made during the install process, make sure you modify the file "Scripts\mx42-disable-peer-download.ps1" in the packages before running them. Simply remove the sections `# REMOVE COMMENT IF YOU WANT TO REVERT ALL CHANGES FROM INSTALLATION #` so that these lines are no longer recognized as comments during execution.

Matrix42 AG

Elbinger Straße 7
60487 Frankfurt am Main
Germany

Tel.: +49 69 6677 3838 0

Fax: +49 69 6677 8865 7

E-Mail: info@matrix42.com

Web: <https://www.matrix42.com/en/>