Installing Dell DR Series System Rapid CIFS and Rapid NFS on Windows and Linux Client Machines

Dell Engineering
September 2015

A Dell Technical White Paper

Revisions

Date	Description
January 2014	Initial release
July 2015	Updated to support all DR Series systems
September 2015	Updated locations for downloading the Dell Rapid plugins as well as updated prerequisites for Linux.

Table of contents

Executive summary

This document provides information about installing Dell DR Series system CIFS and NFS protocol accelerators (called Rapid CIFS and Rapid NFS, respectively) on Windows and/or Linux client machines. This paper is a quick reference guide and does not include all DR Series system deployment best practices.

For additional data management application (DMA) best practice whitepapers, see the DR Series system documentation by selecting your specific product at:

http://dell.com/powervaultmanuals

NOTE: The DR Series system versions and screenshots used for this document may vary slightly, depending on the version of the DR Series system firmware version you are using.

1 Installing Rapid CIFS (RD CIFS)

1.1 Prerequisites

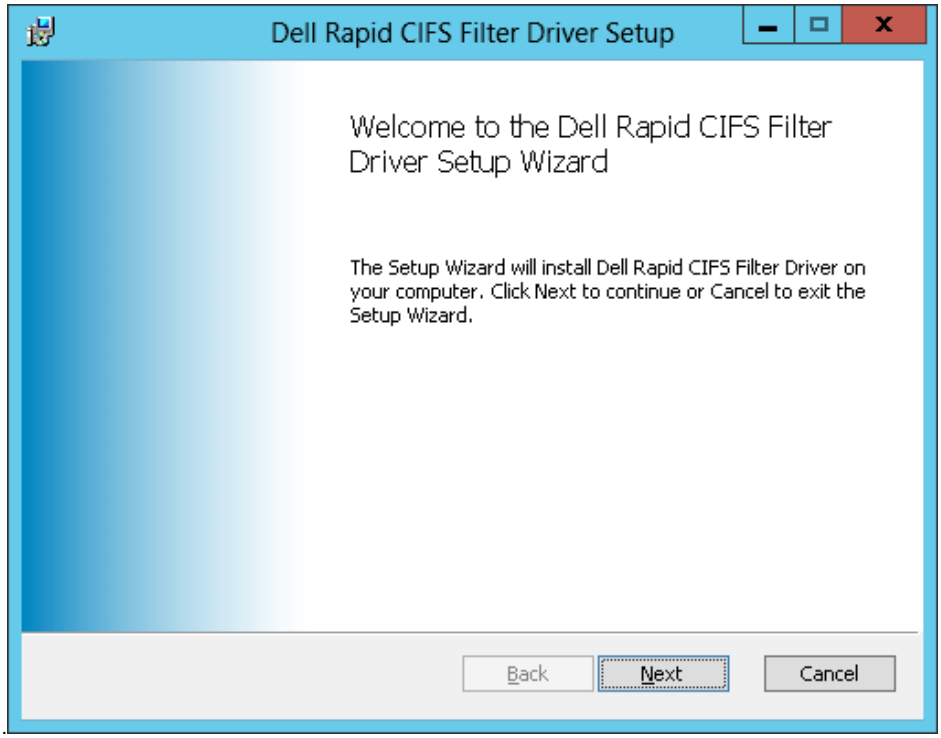
- The client OS must be the 64-bit version of Windows 2008 R2 or Windows 2012.
- The DR container share must be mapped on the client machine.

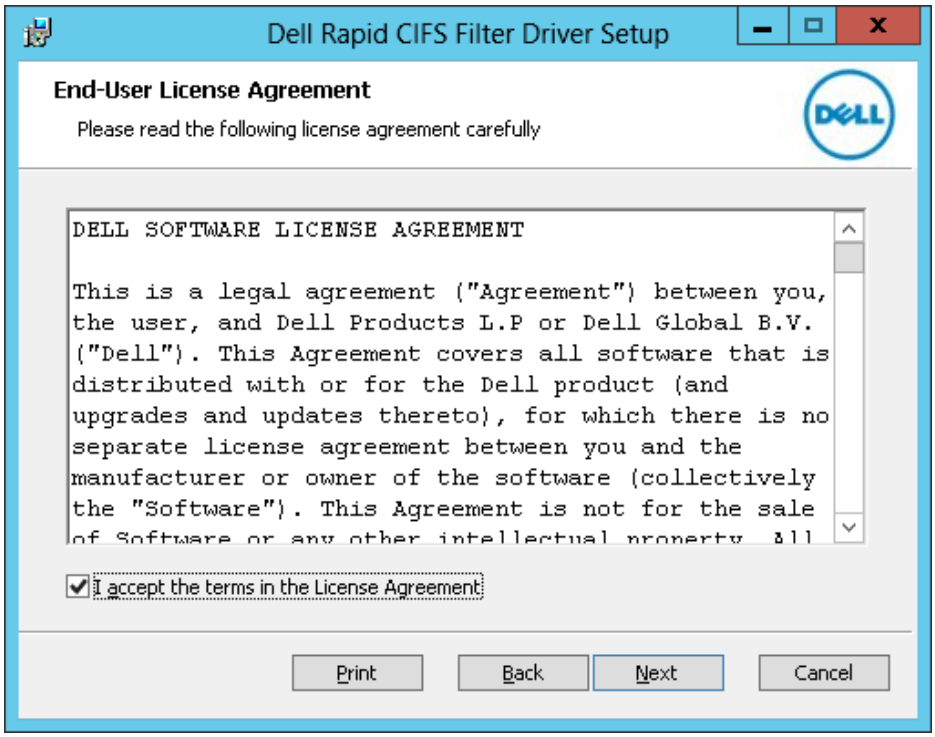
NOTE: For the accelerator to work properly, the backup traffic must go over CIFS directly to the DR Series system and not pass through a media server. If that is the case, you should install the RD CIFS on the media server.

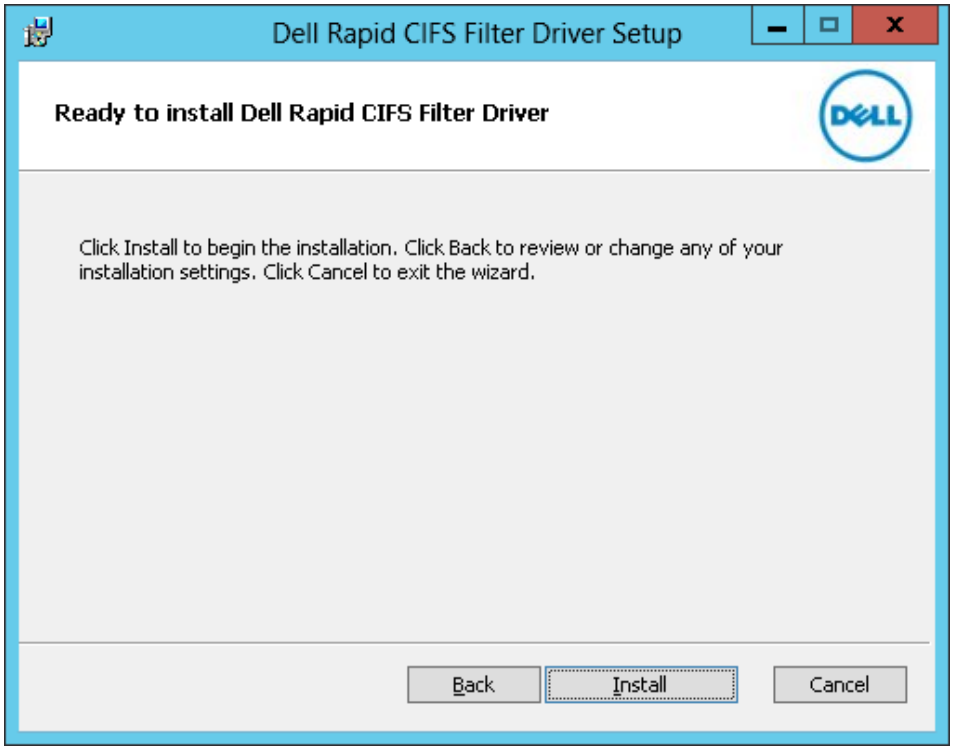
1.2 Steps for installing Rapid CIFS

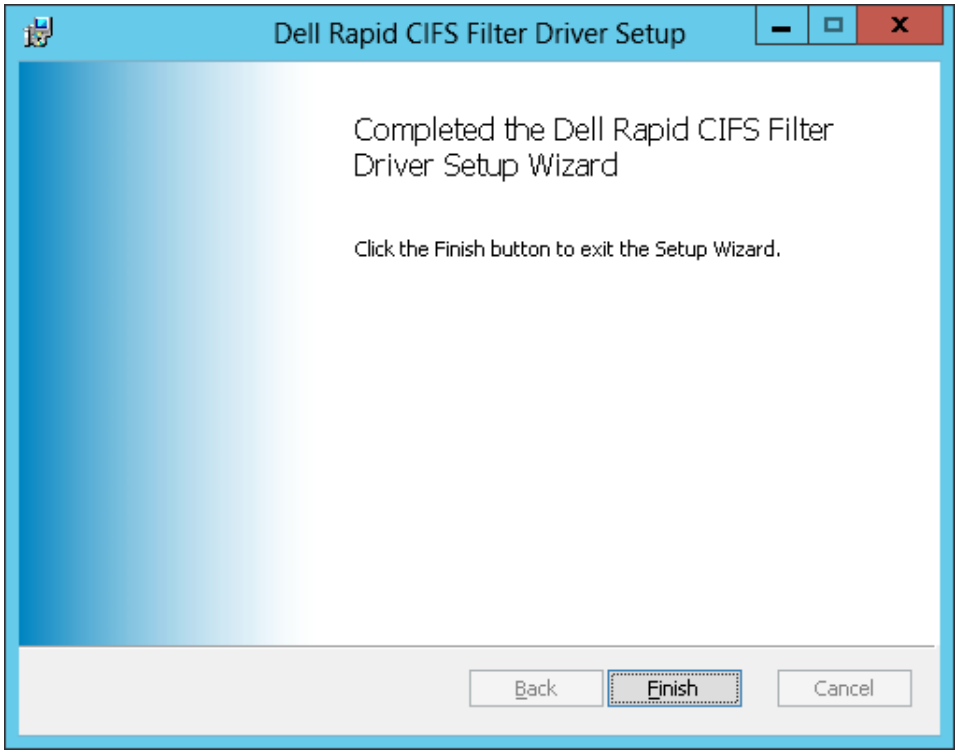
1. Download the MSI to the client box using the following steps:
   a. Go to support.dell.com and navigate to your specific product, such as DR4100, DR6000, etc.
   b. On the support page for your product, click **Drivers & Downloads**.
   c. Expand the IDM category, and for the RDCIFS plugin for your DR Series system OS version, click **Download File**.

2. Run the MSI and follow the instructions in the installation wizard as shown in the screenshots below.

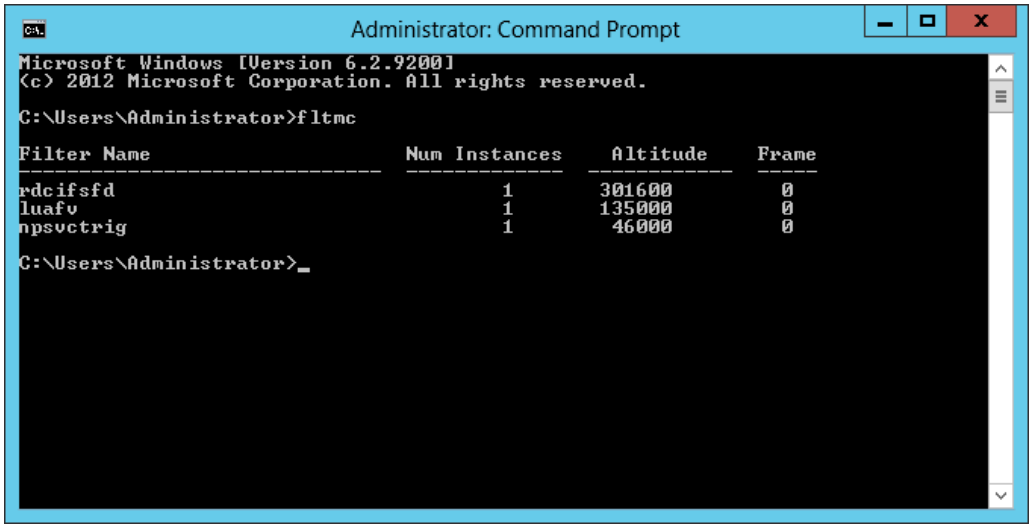



Dell Rapid CIFS Filter Driver Setup
End-User License Agreement
Please read the following license agreement carefully
DELL SOFTWARE LICENSE AGREEMENT
This is a legal agreement ("Agreement") between you, the user, and Dell Products L.P or Dell Global B.V. ("Dell"). This Agreement covers all software that is distributed with or for the Dell product (and upgrades and updates thereto), for which there is no separate license agreement between you and the manufacturer or owner of the software (collectively the "Software"). This Agreement is not for the sale
I accept the terms in the License Agreement
Print
Back
Next
Cancel


Dell Rapid CIFS Filter Driver Setup
Ready to install Dell Rapid CIFS Filter Driver
Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.
Back
Install
Cancel

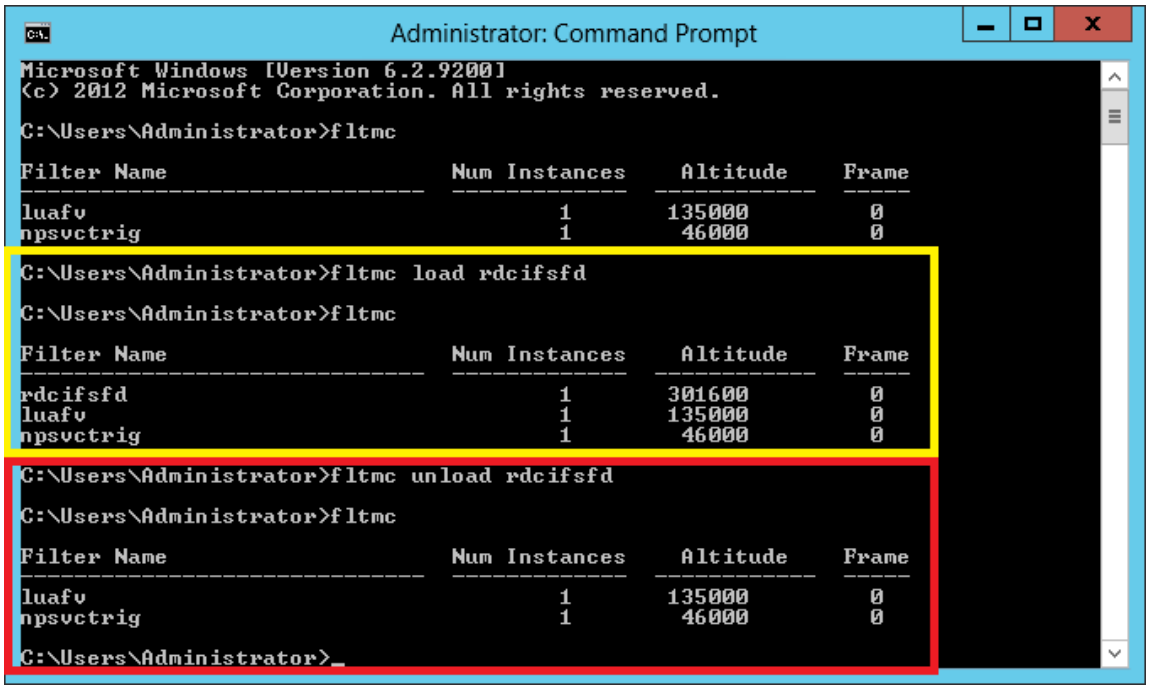


3. Verify that the "**rdcifsfd**" driver is loaded using the command **fltmc**.

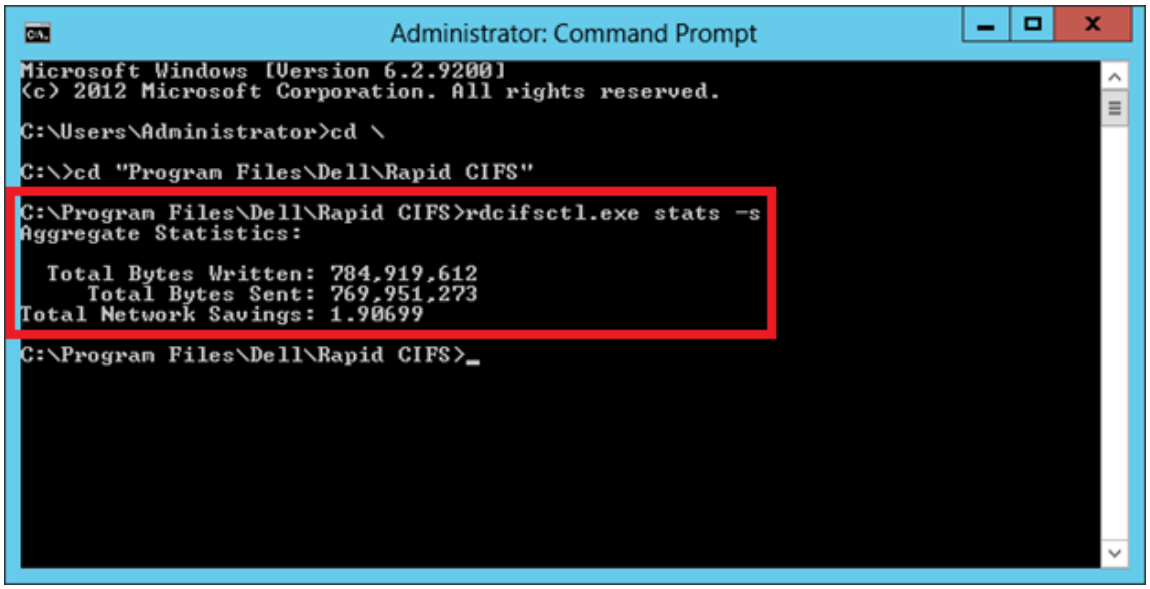


1.3 Features of Rapid CIFS

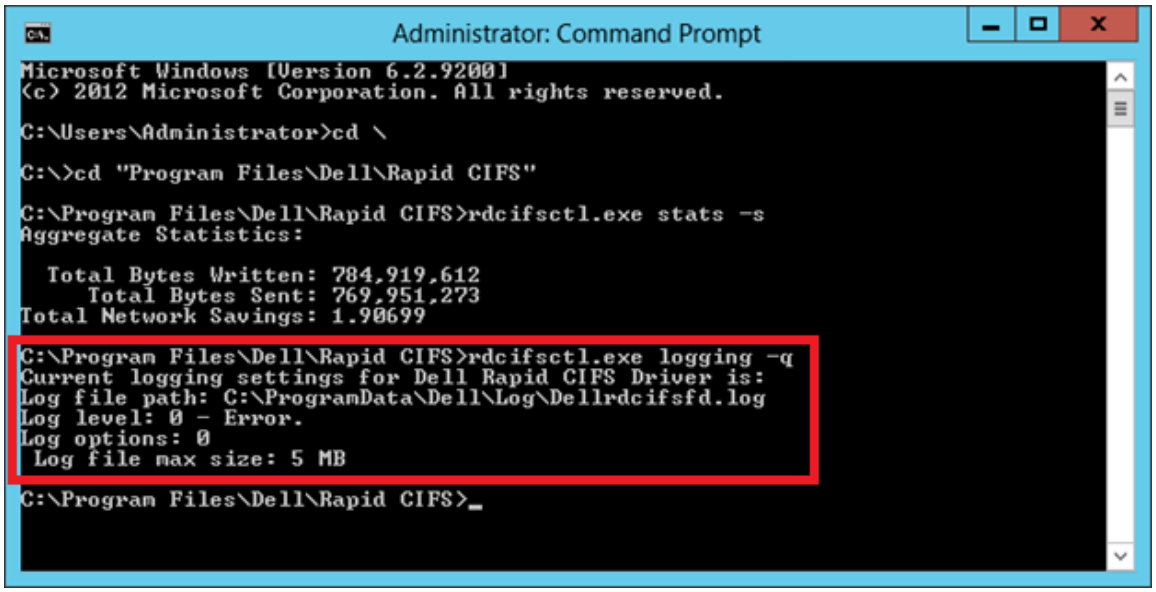
1.3.1 Load and unload Rapid CIFS



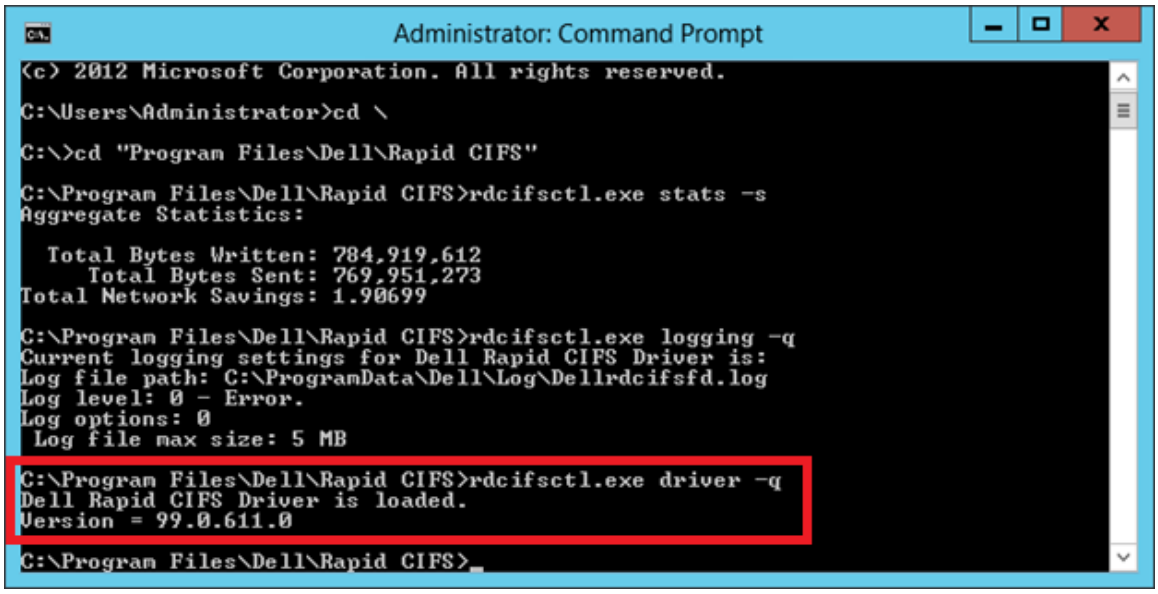
1.3.2 View Rapid CIFS status while running a backup job on the DMA



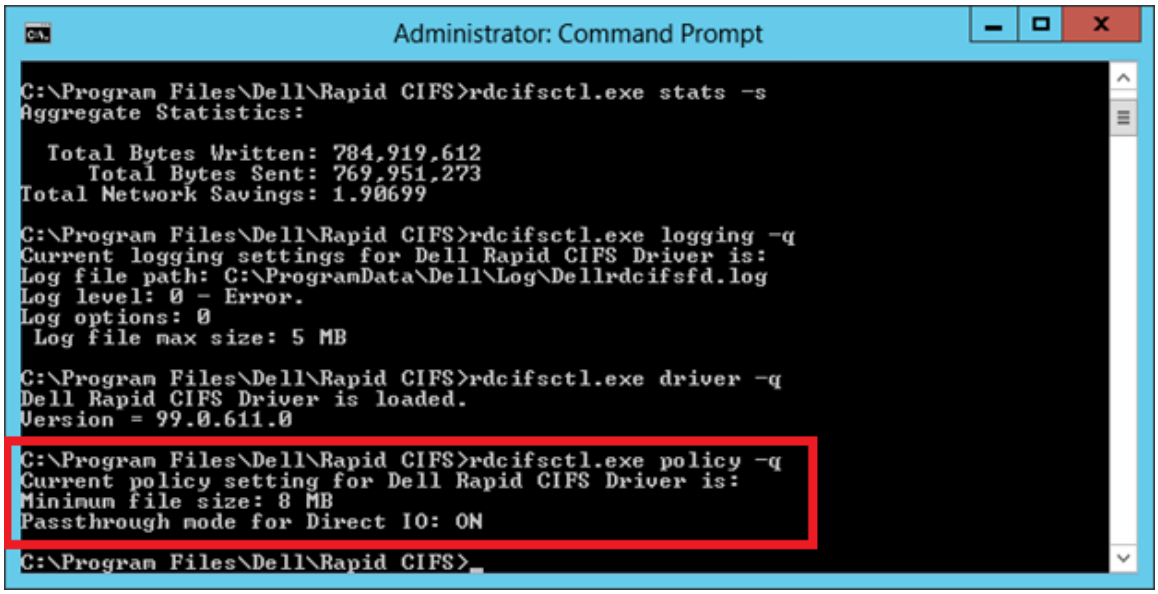
1.3.3 View the log of Rapid CIFS



1.3.4 View the version of Rapid CIFS



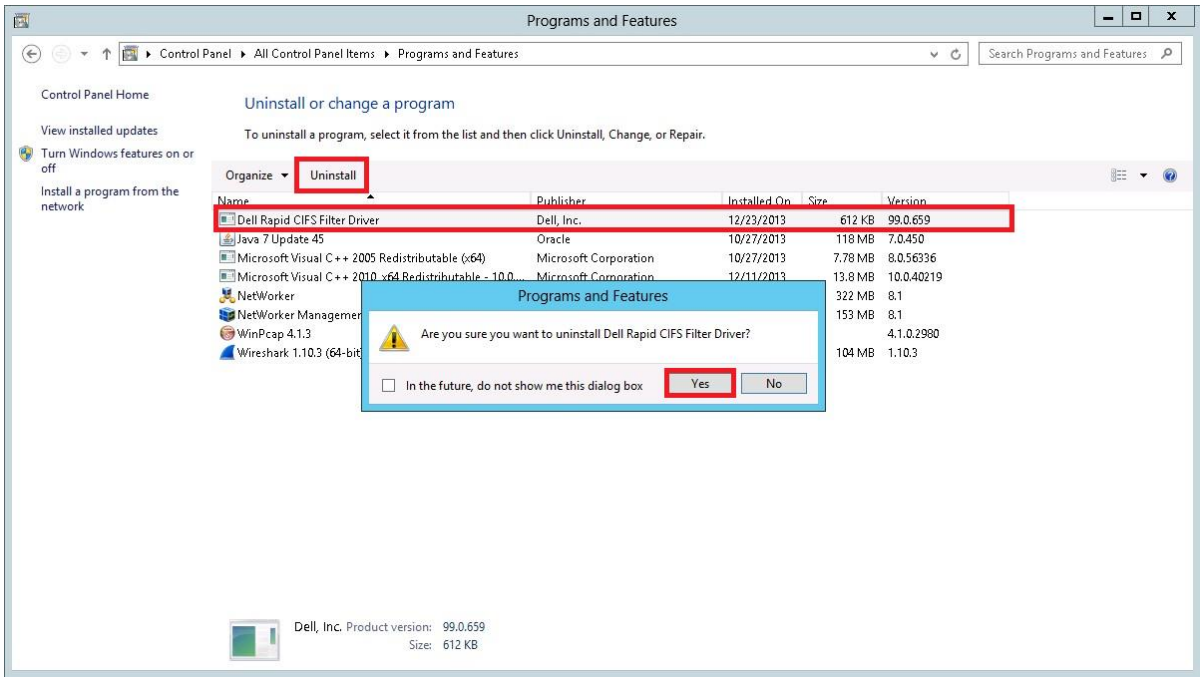
1.3.5 View the policy setting for Rapid CIFS



Note: These settings should not be changed, unless requested by the DR Engineering team.

1.4 Uninstalling Rapid CIFS

Open **Programs and Features**, select **CIFS accelerator**, and then click **Uninstall**.



2 Installing Rapid NFS (RDNFS)

2.1 Prerequisites

- The client OS must be the 64-bit version of CentOS or SUSE.
- The FUSE module should already be installed, as follows:
  On NFS client machine, run the command below and verify the command output:
  # rpm -qa | grep fuse
  fuse-2.8.3-4.el6.x86_64
  gvfs-fuse-1.4.3-15.el6.x86_64
  fuse-libs-2.8.3-4.el6.x86_64
- The plug-in must be installed on the designated Linux-based media server in the following directory, /usr/openv/lib/.

2.2 Steps for installing Rapid NFS

1. Download the installation package to the client box using the following steps:
   a. Go to support.dell.com and navigate to your specific product, such as DR4100, DR6000, etc. On the support page for your product, click **Drivers & Downloads**.
   b. Expand the IDM category, and for the RDNFS plugin for your DR Series system OS version, click **Download File**.
   c. Use WinSCP or similar utility to copy the package to the NFS client machine. The plug-in must be installed on the NFS client machine in the following directory, /usr/openv/lib/.

2. On the NFS client machine, assuming that the current working directory has the installation package named **DellRapidNFS-3.0.0101.1-centos5.7-x86_64.bin.gz**, run the following commands in order:
   - **gunzip ./ DellRapidNFS-3.0.0101.1-centos5.7-x86_64.bin.gz**
   - **chmod a+x ./DellRapidNFS-3.0.0101.1-centos5.7-x86_64.bin**
   - Run the installer: **./DellRapidNFS-3.0.0101.1-centos5.7-x86_64.bin –install**

```
[root@IvanW-RHEL6-02 ~]# ./DellRapidNFS-3.0.0101.1-centos5.7-x86_64.bin -install
Starting, please wait...
RDNFS file systems are not mounted, proceeding with installation...
2 processors with 2 cores each running at 2899.999 MHz ...
Total computing power 11590 MHz ...
Preparing...                ##################################################
oca-libs                    ##################################################
DellRapidNFS                ##################################################

Installation successful!

Log for this operation is /var/log/rdnfs_installer.log

Cleaning up, please wait...
```

   - Create a directory on client machine: **mkdir /mnt/backup**
   - Mount DR NFS container on client machine:
     mount -t rdnfs DR6000-09:/containers/backup /mnt/backup –o marker=[MarkerType]

```
[root@IvanW-RHEL6-02 ~]# mount -t rdnfs dr6000-09:/containers/backup /mnt/backup -o marker=nw
Starting rdnfs [ /mnt/.backup.19375 ] [ container fsid: 10001:0 ] [ server: dr6000-09 ]
[root@IvanW-RHEL6-02 ~]# mount | grep backup
dr6000-09:/containers/backup on /mnt/.backup.19375 type nfs (rw,addr=10.250.243.89)
rdnfs:/mnt/.backup.19375 on /mnt/backup type fuse (rw,nosuid,nodev,allow_other)
```

2.3 Features of Rapid NFS

2.3.1 Main commands: **ru** and **rdnfs**

```
[root@IvanW-RHEL6-02 ~]# ru
ru              <--mpt=<rdnfs mount point> | --pid=<process ID of rdnfs>>
                --show=<name|version|parameters|stats|performance>

Version 3.0.0101 [Built Feb 14 2014 17:06:14]
[root@IvanW-RHEL6-02 ~]# rdnfs
usage: rdnfs <nfs mount point> <roach mount point> -o marker=<marker>
              <nfs mount point>: already mounted nfs mountpoint
              <roach mount point>: a new mount point
              <marker>: appassure, arcserve, auto, cv, dump, hdm,
                        hpdp, nw, or tsm

              e.g rdnfs /mnt/dr6000-00-backup /mnt/dr6000-00-roach

                  rdnfs /mnt/dr6000-01-backup /mnt/dr6000-02-roach -o marker=cv

usage: rdnfs -v
```

2.3.2 View Rapid NFS stats

```
[root@IvanW-RHEL6-02 ~]# ru --mpt=/mnt/backup --show=stats
Operation       Num     Errors  Avg(ms)         Total Bytes     Accelerated

GETATTR:        2570    397     0.440459
READLINK:       0       0       0.000000
MKNOD:          0       0       0.000000
MKDIR:          137     0       5.390518
UNLINK:         0       0       0.000000
RMDIR:          0       0       0.000000
SYMLINK:        0       0       0.000000
RENAME:         0       0       0.000000
LINK:           0       0       0.000000
CHMOD:          0       0       0.000000
CHOWN:          0       0       0.000000
TRUNCATE:       0       0       0.000000
UTIME:          0       0       0.000000
OPEN:           95      0       2.961252
READ:           0       0       0.000000        0
WRITE:          5250018 0       0.162996        172029137688    171804549600
STATFS:         0       0       0.000000
FLUSH:          132     0       157.818909
RELEASE:        132     0       0.668830
FSYNC:          0       0       0.000000
SETXATTR:       0       0       0.000000
GETXATTR:       0       0       0.000000
LISTXATTR:      0       0       0.000000
REMOVEXATTR:    0       0       0.000000
OPENDIR:        0       0       0.000000
READDIR:        0       0       0.000000
RELEASEDIR:     0       0       0.000000
FSYNCDIR:       0       0       0.000000
ACCESS:         0       0       0.000000
CREATE:         37      0       14.244973
FTRUNCATE:      95      0       201.554794
FGETATTR:       37      0       0.001636
LOCK:           0       0       0.000000
```

2.3.3 View Rapid NFS log

```
[root@IvanW-RHEL6-02 ~]# tail -F /var/log/rdnfs.log
2013-09-20 15:44:47 rdnfs [/mnt/backup]:  Physical processors: 2
2013-09-20 15:44:47 rdnfs [/mnt/backup]:  Cores per physical processors: 2
2013-09-20 15:44:47 rdnfs [/mnt/backup]:  Hyperthreading is off
2013-09-20 15:44:47 rdnfs [/mnt/backup]:  Each core is running at 2899 MHz
2013-09-20 15:44:47 rdnfs [/mnt/backup]:  Total computing power: 11596 MHz
2013-09-20 15:44:47 rdnfs [/mnt/backup]: Marker nw enabled ...
2013-09-20 15:44:47 rdnfs [/mnt/backup]: version:       (EAR-3.0.0101) Build: 50814
        Replication Protocol ver: 5
        Built: Feb 14 2014 17:04:50
```

2.3.4 View the Rapid NFS version

```
[root@IvanW-RHEL6-02 ~]# rdnfs -v
        (EAR-3.0.0101) Build: 50814
        Replication Protocol ver: 5
        Built: Feb 14 2014 17:04:50
[root@IvanW-RHEL6-02 ~]# ru --mpt=/mnt/backup --show=version
        (EAR-3.0.0101) Build: 50814
        Replication Protocol ver: 5
        Built: Feb 14 2014 17:04:50
```

2.4 Uninstalling Rapid NFS

Run the installer with the uninstall option.

- **./DellRapidNFS-3.0.0101.1-centos5.7-x86_64.bin –uninstall**