

ReadyNAS OS 6 Desktop & Rackmount Performance

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READYNAS® OS 6 DESKTOP & RACKMOUNT PERFORMANCE

Application data, virtual images, client files, email—the types of data central to running a successful business can seem endless. With ReadyNAS you finally have an advanced and easy-to-use solution for centralizing, securing and controlling access to your digital assets. Way more than just simple unified storage for your company, ReadyNAS allows you to do more than you ever thought you could afford by pairing the latest in performance with innovative efficiency technologies such as unlimited snapshots, thin provisioning and cloud-managed replication. Unified storage combines networked attached storage (NAS) and server attached storage (SAN) into one device making ReadyNAS compatible with servers, desktops, laptops, and mobile devices.

Every device from NETGEAR® runs on the revolutionary ReadyNAS Operating System. This custom-built OS protects stored data not only with automatic RAID configuration, but is the first of its kind to feature the continuous data protection of unlimited snapshots along with real-time anti-virus and native encryption. Designed with ease-of-use in mind, ReadyNAS devices utilize proprietary ReadyCLOUD™ technology for cloud-based discovery, provisioning and even ongoing management.

ReadyNAS supports SATA hard drives (up to 6 TB/drive) and solid state drives (SSD); all models include an eSATA expansion port for scaling capacity as the storage needs of your company grow (up to 126 TB on the ReadyNAS 516 and 716). Compatible with all leading backup software providers, and with real-time anti-virus protection ReadyNAS users enjoy the confidence of knowing data is secure from virtually any threat. In addition, ReadyNAS also features simple remote access to files from any web-enabled device.

These days, your data is your world. With ReadyNAS, protecting and accessing that world has never been easier. ReadyNAS—Storage Made EASY.

CONTINUOUS DATA PROTECTION

NETGEAR has made a revolutionary advancement in data protection with ReadyNAS OS 6. The features below are enabled by default.

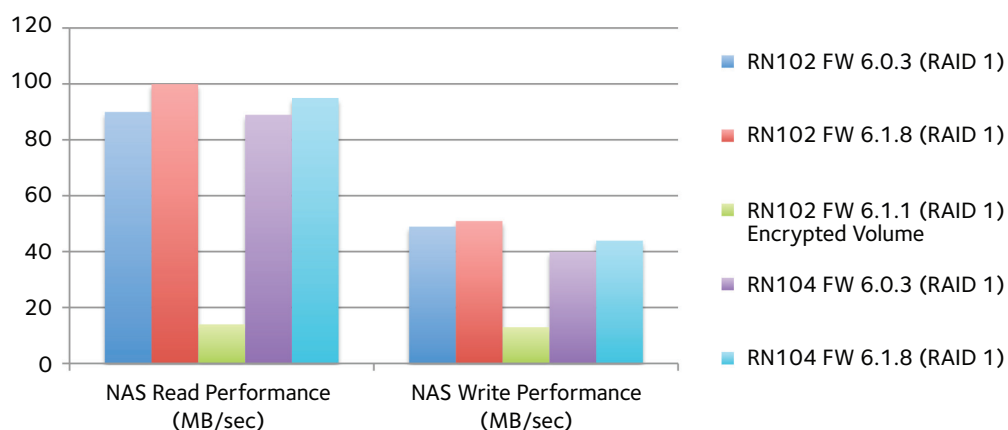
- **Snapshots (Continuous Data Protection).** Metadata/pointer based snapshot do not require additional capacity. Restore to any point in time. Native support for Windows Shadow Copy allows for users to right click and view 'Previous Versions' directly from Windows. Instantly clone data without additional storage requirements. Efficient enterprise class data protection is finally available to everyone.
- **SMB3 (Server Message Block).** Native support for subset of SMB3 file protocol features which was released with Windows 8 and Windows Server 2012.
- **Metadata checksumming enabled by default on ReadyNAS 100 Series.** Metadata is also mirrored for additional protection. Provides a more robust data integrity solution versus ext3/ext4 based storage solutions.
- **Full data checksumming on writes for ReadyNAS 300, 500, 700, 2120, 3220, and 4220.** Provides high level of data integrity during writes. This feature is available on ReadyNAS 100, but not turned on by default.

READYNAS OS 6 NAS PERFORMANCE BENCHMARKS

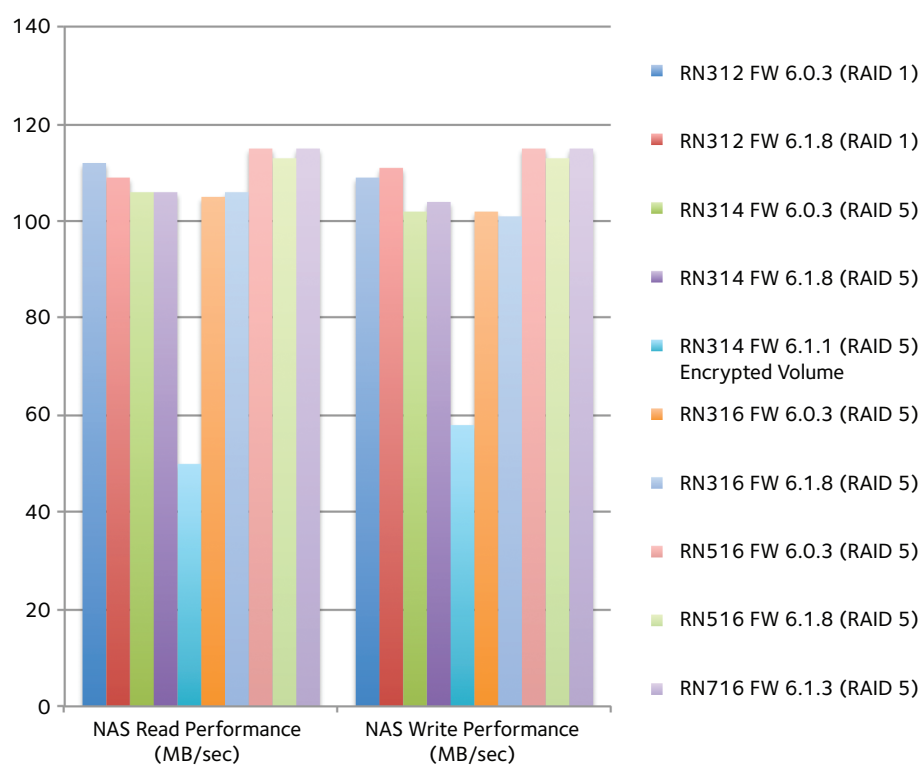
Raw performance benchmark data below is based on drag and drop testing. All benchmarks utilize a single Ethernet port on the unit under test. The default Ethernet connection is a Gigabit Ethernet port unless otherwise stated. The firmware versions used for testing are listed. NETGEAR recommends upgrading to the latest firmware version at all times. The RAID configuration is also listed. Please note these are benchmark results and actual performance will vary.

For reference the theoretical limit for a Gigabit Ethernet port is 125 MB/sec.

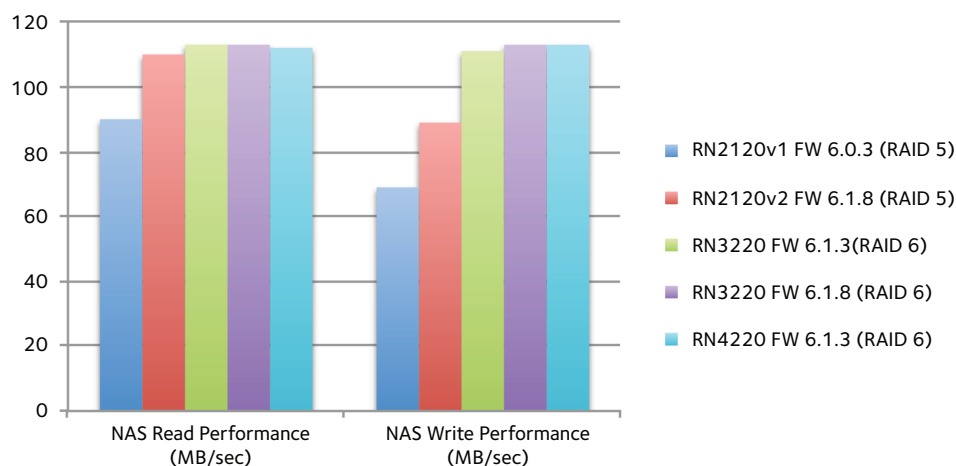
SMALL OFFICE/HOME OFFICE DESKTOP PERFORMANCE OVERVIEW (MB/SEC)



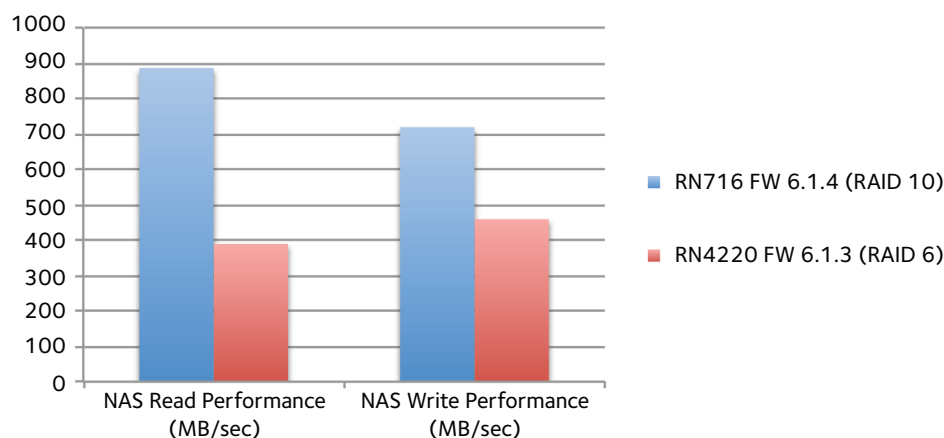
BUSINESS DESKTOP PERFORMANCE OVERVIEW (MB/SEC)



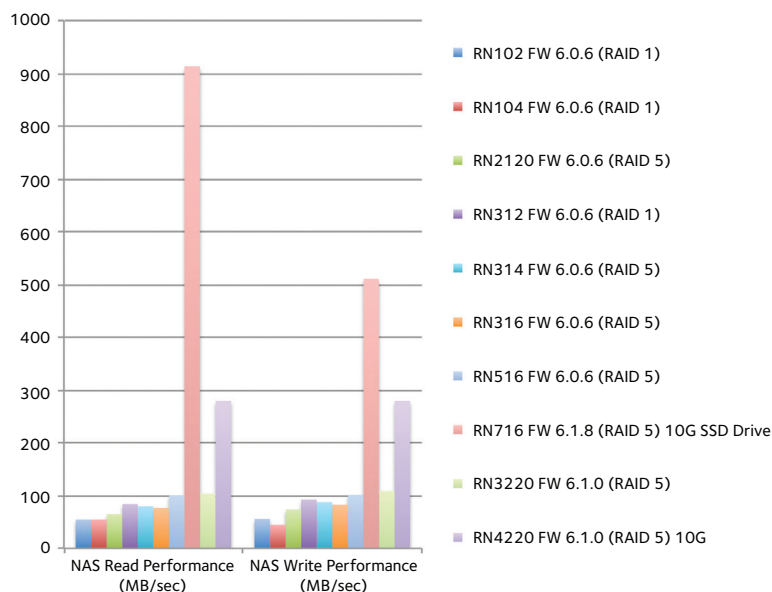
BUSINESS RACKMOUNT PERFORMANCE OVERVIEW (MB/SEC)



10G ENABLED BUSINESS/PERFORMANCE OVERVIEW (MB/SEC)



ISCSI PERFORMANCE OVERVIEW (MB/SEC)



READYNAS 100 SERIES PERFORMANCE

The ReadyNAS 100 Series provides all the additional data protection with snapshots and data integrity with metadata checksums and mirroring at the same performance levels of our previous products. There are no competitive products in the class which provide the advanced data protection ReadyNAS 100 Series offers.

READYNAS 300/500/2120/3220 SERIES PERFORMANCE

ReadyNAS 300/500/2120/3220 Series provides additional data protection with snapshots and the ability to do self-service restorations plus additional data integrity (even more than 100 series with full data checksums). There are no competitive products in the market that can provide this level of data protection.

READYNAS 716 & 4220 SERIES PERFORMANCE

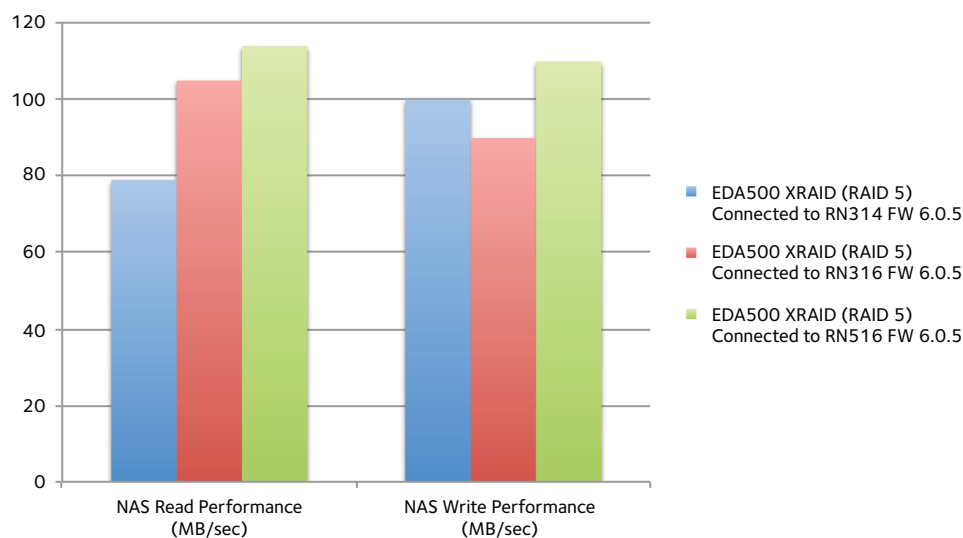
ReadyNAS 716 & 4220 are designed for performance. The ReadyNAS 716 and 4220 include all the ReadyNAS OS 6 data protection features including snapshots. The ReadyNAS 716 & 4220 units include two 10Gb Ethernet ports. The ReadyNAS 716 supports two 10GBase-T ports. The ReadyNAS 4220 is available in both SFP+ and 10GBase-T options. Both of these units are ideal for any high performance application. This combination of data protection and performance is typically only found in Enterprise data solutions at Enterprise data prices.

READYNAS EXPANSION DISK ARRAY (EDA)

ReadyNAS desktop series 300, 500, and 700 all support the addition of an expansion disk array (EDA). The ReadyNAS will manage the additional storage in the EDA. The high-end ReadyNAS 500 and 700 series support the addition of up to three EDA devices.

Performance benchmarks below represent a single EDA connected to a ReadyNAS device.

EXPANSION DISK ARRAY (EDA) PERFORMANCE OVERVIEW (MB/SEC)



READYNAS OS 6 NAS PERFORMANCE TOOLKIT BENCHMARKS

Besides drag and drop data throughput rates, we are also providing the Intel NAS Performance Toolkit (NASPT) benchmark scores. The test suite tries to emulate different use cases. Please note these are benchmark scores and actual performance will vary.

READYNAS DESKTOP SERIES NASPT¹ BENCHMARKS (MB/SEC)

Product	RN102	RN104	RN312	RN314	RN316	RN516	RN716 (10GE)
FirmWare	6.1.7	6.1.7	6.1.7	6.1.7	6.1.7	6.1.7	6.1.3
RAID	RAID1	RAID5	RAID1	RAID5	RAID5	RAID5	RAID5
HD Video Playback	100	95	107	102	100	114	415
2x HD Playback	101	97	108	101	100	108	422
4x HD Playback	100	95	108	103	102	114	382
HD Video Record	55	49	127	121	120	144	719
HD Playback and Record	64	54	104	92	85	115	463
Content Creation	3	2	7	8	8	12	48
Office Productivity	40	39	46	47	46	53	43
File Copy to NAS	52	49	122	125	116	150	725
File Copy from NAS	100	96	108	102	101	111	303
Dir Copy to NAS	3	3	3	4	3	6	21
Dir Copy from NAS	7	7	10	10	10	17	41
Photo Album	36	31	37	33	34	48	17

¹More information available at http://www.intel.com/products/server/storage/NAS_Perf_Toolkit.htm

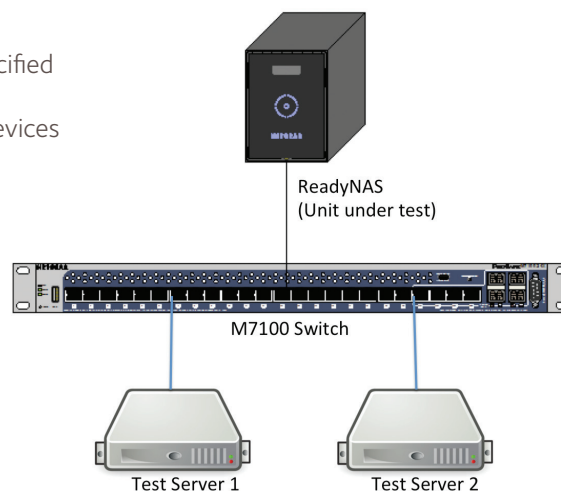
READYNAS RACKMOUNT SERIES NASPT¹ BENCHMARKS (MB/SEC)

Product	2120v1	2120v2	RN3220	RN4220
FirmWare	6.1.1	6.1.8	6.1.7	6.1.3
RAID	RAID5	RAID5	RAID6	RAID6
HD Video Playback	82.1	106.973	112.297	105.3
2x HD Playback	90.2	107.711	112.134	116.6
4x HD Playback	96	105.828	111.604	117.7
HD Video Record	91.8	79.448	142.506	147.1
HD Playback and Record	76.6	92.25	111.55	111.1
Content Creation	9	10.691	11.434	11.8
Office Productivity	34.4	47.107	51.676	36
File Copy to NAS	96.9	80.702	142.303	153.2
File Copy from NAS	73.1	106.001	111.546	100.7
Dir Copy to NAS	3.9	3.32	9.856	16.2
Dir Copy from NAS	11.5	9.674	16.975	29.5
Photo Album	10	36.066	47.731	14

¹More information available at http://www.intel.com/products/server/storage/NAS_Perf_Toolkit.htm

TEST ENVIRONMENT

- Benchmark tests are run in default mode and jumbo frames enabled
- Device being tested is fully loaded with drives in the RAID mode specified
- Values reported may be an aggregate number from multiple client devices
- Test Servers 1 & 2 are identical
 - Windows 8.1 Pro
 - Intel Core i7-2600 CPU @ 3.4 GHz
 - 16GB memory
 - Disk: M4-CT064M4SSD2 64GB MLC SSD x 3 with RAID 0



FOR MORE INFORMATION

- NETGEAR website www.netgear.com/readynas
- Community Forum www.readynas.com/forum
- NETGEAR support site www.support.netgear.com

Disclaimer: All results are provided for reference and actual performance will vary.