

BUFFALO WS5420RN40S9

Buffalo TeraStation WS5420RN Windows Server IoT 2019 User Manual

Model: WS5420RN40S9

1. INTRODUCTION

This manual provides comprehensive instructions for the setup, operation, and maintenance of your Buffalo TeraStation WS5420RN Windows Server IoT 2019 Rackmount NAS. This device is designed to provide reliable, high-performance network-attached storage with seamless integration into Windows environments, offering advanced data management and protection capabilities.



Figure 1: Front view of the Buffalo TeraStation WS5420RN Rackmount NAS, showing four accessible drive bays.

2. KEY FEATURES

The Buffalo TeraStation WS5420RN is equipped with a robust set of features to meet demanding storage needs:

- **Seamless Windows Integration:** Native Windows Server IoT 2019 for Storage Standard Edition, providing full Windows Server 2019 kernel and interface compatibility.
- **Leverage Windows Server Features:** Utilize native Windows Server functionalities such as Shadow Copy, Azure Sync, and Active Directory for optimized file server operations.
- **Reliable Storage with Effortless Setup:** Includes NAS-grade hard drives with RAID 1 pre-configured for immediate data protection. No Client Access Licenses (CALs) are required.
- **10GbE Connectivity:** Achieves up to 10 times faster transfer speeds compared to 1GbE with CAT 6A or higher rated cabling.
- **Cloud Integration:** Supports synchronization with Dropbox, Azure, and OneDrive for hybrid cloud solutions, enhancing data security, cost savings, and scalability.

- **Comprehensive Backup and Disaster Recovery:** Facilitates robust BDR plans with options for cloud backup, server data replication, and VM restoration to any hardware.
- **High Capacity:** This model includes 4 pre-tested, NAS-grade hard drives, offering 40 TB raw capacity. Ships in RAID 5 for 30 TB usable capacity, with options to change to RAID 6 or RAID 0.
- **Expansive Virtualization Capabilities:** Reduces hardware costs, optimizes storage utilization, and enables streamlined and secure remote work environments.
- **Free Data Recovery Service:** Qualifies for free simple logical data recovery when registered.



Figure 2: The TeraStation highlighting included hard drives and 10 Gigabit Ethernet (10GbE) capability.

3. SETUP

3.1. Unpacking and Initial Inspection

Carefully unpack all components from the box. Verify that all items listed in the "What's in the Box" section are present and inspect for any physical damage. If any items are missing or damaged, contact Buffalo support immediately.

3.2. What's in the Box

- TeraStation WS5420RN Unit
- AC Power Cable
- 6a Ethernet Cable
- Front Panel Key
- Warranty Statement
- Quick Setup Guide
- Setup Media (SD CARD)

3.3. Hardware Installation

For rackmount installation, secure the unit in a standard server rack using appropriate rack rails (not always included, check packaging). Connect the power cable to the unit and a suitable power outlet. Connect the 10GbE Ethernet cable to your network switch or router for optimal performance. Ensure proper ventilation around the unit.



Figure 3: Rear view of the TeraStation, showing power input, USB ports, and multiple Ethernet ports, including 10GbE.

3.4. Initial Configuration

Refer to the included Quick Setup Guide and Setup Media (SD CARD) for detailed instructions on initial network configuration and accessing the Windows Server IoT 2019 interface. The unit comes with RAID 1 pre-configured, but you can adjust RAID settings (e.g., to RAID 5 or RAID 0) as per your storage and redundancy requirements.

4. OPERATING THE TERAStation

The TeraStation WS5420RN, running Windows Server IoT 2019, offers various operational capabilities for data management and business continuity.

4.1. Data Backup and Cloud Integration

The TeraStation can serve as a central backup hub, allowing you to back up data from cloud services (like Dropbox, Azure, OneDrive) or upload data to them. It also supports creating virtual machine archives and backing up local devices.



Figure 4: Diagram illustrating hybrid cloud integration with Azure, OneDrive, and Dropbox.

Watch the video below for a detailed guide on using the TeraStation as a central backup hub:

Your browser does not support the video tag.

Video 1: "Using TeraStation Windows Server IOT as a Central Backup Hub" - This video demonstrates how to configure the TeraStation for various backup scenarios, including cloud integration, virtual machine archiving, and offsite replication.

4.2. Surveillance Server Functionality

The TeraStation can be configured as a surveillance server, allowing you to store and manage footage from security cameras. Its robust storage capacity and Windows Server IoT operating system make it suitable for continuous recording and playback.

For a general overview of the TeraStation's capabilities with Windows Server IoT 2019, refer to the video below:

Your browser does not support the video tag.

Video 2: "BUFFALO TeraStation Windows Server IoT 2019" - This video provides an introduction to the features and potential use cases of the TeraStation with Windows Server IoT 2019.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your TeraStation:

- **Firmware Updates:** Periodically check for and apply firmware updates from the Buffalo support website to ensure system stability and access to the latest features.
- **Drive Health Monitoring:** Utilize the built-in monitoring tools to check the health status of the hard drives. Replace any failing drives promptly.
- **Environmental Control:** Ensure the TeraStation is operated within recommended temperature and humidity ranges. Maintain clear airflow around the unit to prevent overheating.
- **Data Integrity Checks:** Regularly verify the integrity of your backed-up data to ensure successful recovery in case of a disaster.



Figure 5: The TeraStation with one drive bay open, illustrating easy access for drive maintenance or replacement.

6. TROUBLESHOOTING

If you encounter issues with your TeraStation, consider the following common troubleshooting steps:

- **Network Connectivity:** Verify all Ethernet cables are securely connected and network settings are correct. Check network switch/router status.
- **Power Issues:** Ensure the power cable is firmly connected and the power outlet is functional.
- **Drive Status Lights:** Consult the manual for the meaning of different drive status light patterns. A blinking or red light may indicate a drive issue.
- **Accessing Interface:** If unable to access the web interface, try restarting the unit. Ensure your computer is on.

the same network subnet.

- **Software Compatibility:** Ensure any third-party software used with the TeraStation is compatible with Windows Server IoT 2019.
- **System Logs:** Access the system logs through the management interface for detailed error messages that can help diagnose problems.

If problems persist, contact Buffalo technical support for assistance.

7. SPECIFICATIONS

Attribute	Detail
Brand	BUFFALO
Model Number	WS5420RN40S9
Series	TeraStation Windows Server IoT NAS
Hard Drive Capacity	40 TB (4x10TB)
Operating System	Windows Server IoT 2019 for Storage Standard Edition
Hardware Platform	PC
Item Weight	28.7 pounds
Package Dimensions	23 x 21.3 x 7.9 inches
UPC	747464134741

8. WARRANTY AND SUPPORT

Buffalo stands behind its products with comprehensive support and warranty:

- **Warranty:** Includes a 3-year warranty, which covers the hard drives.
- **Technical Support:** 24/7, award-winning US-based support is available for assistance.
- **Data Recovery Service:** The product qualifies for free simple logical data recovery service when registered.

For further assistance, please visit the official Buffalo Americas website or contact their support line.

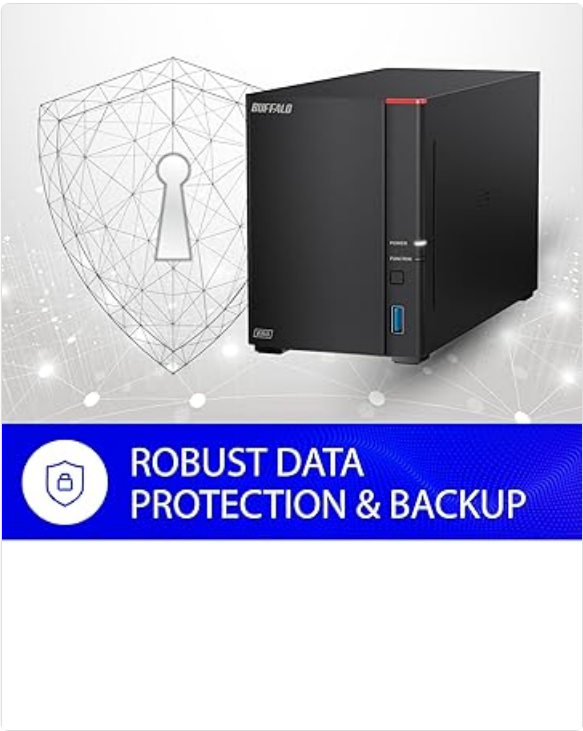


Figure 6: Buffalo's 24/7 U.S.-Based Live Phone Support team.

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TeraStation™ WS5020 IoT Series
Versatile Storage Solution

Windows Server
IoT

Buffalo's TeraStation WS5020 IoT series is a professional Network Attached Storage solution integrated with Windows Server IoT 2019. The NAS family has been purpose-built to be effectively deployed in a Windows environment, and aims to deliver open-ended storage and centralized data management for your business while saving costs and keeping your systems and data safe.

The featured Windows Server IoT 2019 for Storage Standard Edition offers smooth integration with other Microsoft products and services such as Office 365 and Azure, and is designed to help you enable a wide variety of IoT Internet of Things scenarios regardless of industry. From manufacturing to retail to medical, Windows Server IoT allows you to manage countless devices, as well as store, process, and back up data from those devices and seamlessly scale between the cloud and the edge. The lack of need for Client Access Licenses ensures centralized access from additional users and devices, and Active Directory support helps manage and secure a large number of users.

The TeraStation WS5020 IoT offers features that are designed to maximize hardware utilization and lower storage costs. With Buffalo Cache, data deduplication, Azure and OneDrive integration, and a host of virtualization capabilities, the WS5020 reduces hardware overhead costs while simplifying redundancy and improving data protection, so you can create a scalable and cost-effective storage solution that you can expand as you fit.

Buffalo's TeraStations are widely considered the most secure NAS product on the market. The TeraStation WS5020 IoT are available in desktop and rackmount form factors, and is available in 8TB, 16TB, 32TB, and 40TB capacities. Each device comes with pre-installed NAS-grade hard drives included, along with a 3-year warranty and our award-winning, North America-based 24/7 technical support.

This cost-effective WS IoT storage solution provides limitless utility including:

- Effortless deployment into Windows-based environments and seamless integration with Microsoft services
- Manage large amounts of devices and data to create and power new IoT solutions for your business
- Versatility in implementing effective industry solutions, from POS systems to surveillance servers
- Create secure distribution points using Microsoft Endpoint Manager
- Administer flexible backups for Microsoft 365 and other services
- Create a hybrid cloud solution using Azure and OneDrive integration for additional security
- Enable a scalable and cost-effective storage solution and virtualization
- Protect data between servers and strengthen your BCP plan using DFS Replication, Hyper-V, and other features

Contact Buffalo to learn more: 800-488-7446 | sales@buffaloamericas.com | www.buffaloamericas.com

[pdf] Quick Start Guide Datasheet Guide

WS5000N series datasheet UpdatedJuly2015 Windows™ Server IoT 7 ore fa — and services such as Office 365 Azure is designed to help you enable a TeraStation™ Quick Setup Guide Ethernet Cable CAT 6 *Rail Kit with WS5020 family 1 buffalotech images |||

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Buffalo Windows Server NAS

Buffalo's WS5020 offers full Windows Server file server functionality at entry-level prices.

Key Benefits:

- ✓ Entry-level price point for Windows Server Operating System file servers
- ✓ No CALs required to save on licensing fees
- ✓ Access to Microsoft enterprise security features
- ✓ Pre-configured system for easy and repeatable roll-out
- ✓ Flexible OS with native security features
- ✓ Made in Japan and TAA compliant
- ✓ 3-year warranty on hardware components (including hard drives) with optional upgrades
- ✓ 24/7, U.S.-based technical support

Buffalo's TeraStation WS5020 NAS
Buffalo's TeraStation WS5020 NAS runs Windows Server IoT 2019, a binary equivalent to Windows Server 2019 that offers the full functionality of the established operating system.

The Buffalo WS5020 NAS leverages the operating system's features for a versatile and cost-effective storage and backup solution that is designed to optimize file server functions, centralize stores, and protect valuable end-user data.

Because it is a full Windows operating system, the WS5020 offers the same familiar Windows-based interface. Purpose-built as an efficient data storage and backup solution, WS5020 integrates natively into Windows-based environments with no CALs required.

With Windows Server 2012 support ending, Buffalo's WS5020 NAS is an excellent low-cost transition option for legacy servers, and its ease-of-setup enables straightforward and repeatable roll-out.

WS5020 comes with hard drives pre-installed and offers a 3-year warranty on all components (including hard drives) and 24/7 U.S.-based support. WS5020 is made in Japan and TAA compliant.

Form Factor	Capacity	Part Number
2-Bay Desktop	8 TB	WS5220DN08S9
	16 TB	WS5420DN16S9
4-Bay Desktop	16 TB	WS5420DN16S9
	32 TB	WS5420DN32S9
	40 TB	WS5420RN40S9
104-Bay Rackmount	16 TB	WS5420RN16S9
	32 TB	WS5420RN32S9
	40 TB	WS5420RN40S9

Product Website: bit.ly/3YoIYys

Product Datasheet: bit.ly/45i5FGS

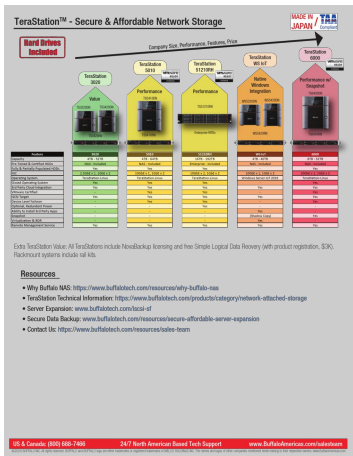
www.BuffaloAmericas.com

[pdf] Datasheet Warranty

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Buffalo Windows Server NAS Buffalo s WS5020 offers full Windows Server file server functionality at ... TB 40 TB Part Number WS5220DN08S9 WS5420DN08S9 WS5420DN16S9 WS5420DN32S9 WS5420RN16S9 WS5420RN32S9 **WS5420RN40S9** Product Website: bit.ly/3YoIYys Product Datasheet: bit.ly/45i5FGS Buffalo s TeraStati...

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TeraStation™ - Secure Affordable Network Storage TeraStation 3020 Value
TS3220DN TS3420DN Co ... S HDDs Included WS5420RN32S9 Pre-Configured
RAID 3rd Party Application Cloud Integration Rail **WS5420RN40S9** Kit Included
Optional 5-Year Enhanced Warranty US Canada: 800 688-7466 24/7 Nor...
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TeraStation Windows Server IoT datasheet WS Network attached storage nas WS5020 family buffalotech
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WS5000N series datasheet Updated July 2015 Manufacturer Brochure Buffalo TeraStation 5420DN
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NFR Order Form
Buffalo Americas, Inc. is pleased to offer the NFR Order Form program to authorized Buffalo Partner Partners in the US and Canada. This program provides our valued Partners with the opportunity to receive, test and demonstrate qualified Buffalo storage products.

Step 1: Reseller Information

COMPANY NAME

CONTACT NAME

CONTACT PHONE

COMPANY ADDRESS

CITY

STATE

ZIP

PHONE NUMBER

USA

BUSINESS ADDRESS

Step 2: Select Distributor

CRM Account #
Region Office Account #
Tech Sales Account #
System Account #

Step 4: Product List

Buffalo Part #
Distributor Part #
*Complete product description for each item

Step 3: Intended Product Use

Please describe in detail how the product will be used.

Step 5: Sign & Submit Form

SUBMIT
Email Submission: orders@buffaloamericas.com

Program Guidelines

1. The NFR program is open to all Buffalo Americas, Inc. US & Canada Storage USA, Region Office, System and Tech Sales.
2. Partner must agree to program Participant Guidelines.
3. Partner must complete and submit this form and mail to orders@buffaloamericas.com for NFR SUBMIT.
4. For each program, the partner will be required to provide a copy of the NFR form, the NFR form and purchase order to the selected distributor.
5. Program discounts will be based on the partner's order to the distributor.
6. Program discounts will be based on the partner's order to the distributor.
7. Partner must agree to the terms of the program and accept the program participant guidelines.
8. The designated distributor will be responsible for shipping the order.

Terms & Conditions

1. Buffalo Americas, Inc. reserves the right to change the program at any time without notice.
2. Partner must agree to the program Participant Guidelines.
3. Partner must complete and submit this form and mail to orders@buffaloamericas.com for NFR SUBMIT.
4. For each program, the partner will be required to provide a copy of the NFR form, the NFR form and purchase order to the selected distributor.
5. Program discounts will be based on the partner's order to the distributor.
6. Program discounts will be based on the partner's order to the distributor.
7. Partner must agree to the terms of the program and accept the program participant guidelines.
8. The designated distributor will be responsible for shipping the order.

☐ I hereby agree to the terms and conditions set forth above.

*DISCOUNTS APPLY TO THE TOTAL ORDER VALUE. ALL OTHERS WILL NOT BE APPLIED.

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