

### OMNINAS - Your Personal Cloud

The Shuttle OMNINAS KD22 is a two-bay network-attached storage (NAS) which is designed to become your hub of multimedia content - letting you easily store and share documents and multimedia files. Compared to KD20 and KD21, the KD22 delivers even higher transfer speeds and additionally features WLAN. It makes sure you have your files always with you – be it on the go on Android or iOS-based devices or basically from any place in the world.



Feature Highlights	
Application	<ul style="list-style-type: none"> <li>Budget-friendly NAS Server for Small Office, Workgroups and Home Use</li> </ul>
Design	<ul style="list-style-type: none"> <li>Elegant design with solid 2.5mm aluminium for better heat dissipation</li> <li>Dimensions: ca. 17 x 9 x 22.5 cm = 3.4 litres</li> </ul>
Low noise	<ul style="list-style-type: none"> <li>Ultra-quiet operation - the fan is activated automatically only under heavy load/temperature</li> </ul>
RAID 1 Hot Swap	<ul style="list-style-type: none"> <li>Two storage bays, supports 2.5"/3.5" drives</li> <li>Support 2x 6 TB hard disks (or larger)</li> <li>Supports reliable RAID 1 mirroring with hot-swap</li> </ul>
Performance	<ul style="list-style-type: none"> <li>Superior R/W performance: up to 110/75 MB/s [1]</li> </ul>
Power-Saving	<ul style="list-style-type: none"> <li>Power saving: only 9.6 W in standby and 19 W in normal operation (idle)</li> </ul>
Connectors	<ul style="list-style-type: none"> <li>SD card reader (Auto-Copy &amp; share function)</li> <li>2x USB 3.0 (Auto-Copy &amp; share function)</li> <li>1x USB 2.0</li> <li>Gigabit LAN (RJ45) supports WOL and 802.3az</li> </ul>
Anywhere Access	<ul style="list-style-type: none"> <li>Accessible from local network (LAN/WLAN) under Windows, Mac OS X or Linux</li> <li>Accessible via Internet (Notebooks, PCs)</li> <li>Accessible from iOS and Android mobile devices (smart phones or tablets)</li> </ul>
Functions	<ul style="list-style-type: none"> <li>Wireless LAN Access Point (WLAN AP)</li> <li>Samba Server (SMB file sharing)</li> <li>Supports DLNA/iTunes media server for audio/video streaming</li> <li>Scheduled Backup: NAS to USB, NAS to NAS</li> <li>Scheduled BT downloads without PC</li> <li>Printer Server, FTP Server (with SSL/TLS)</li> <li>Online Firmware Update, On/Off Scheduler</li> </ul>
Software	<ul style="list-style-type: none"> <li>ONMINAS Finder (Windows &amp; Mac)</li> <li>Acronis True Image Personal</li> </ul>



Shuttle Order No.: NAS-KD22001  
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Shuttle OMNINAS KD22 – Overview



- A Power Button
- B Status LED
- C Press here to open the front door
- D 70 mm smart fan
- E 2x USB 3.0 connectors
- F USB 3.0 status LED
- G SD card reader status LED
- H SD card reader
- I Hard disk 1 status LED
- J Hard disk 2 status LED
- K DC input power jack
- L K-Lock security slot (hole)
- M Reset button (hole)
- N Gigabit LAN speed indicator LED
- O Gigabit LAN port (RJ45)
- P Gigabit LAN activity indicator LED
- Q USB 2.0 connector
- R Solid 2.5 mm aluminium cover
- S Hot Swap button 2 (RAID 1 only)
- T Hot Swap button 1 (RAID 1 only)
- U Bay cover (front door)
- V Hard disk tray 2
- W Hard disk tray 1 (open)

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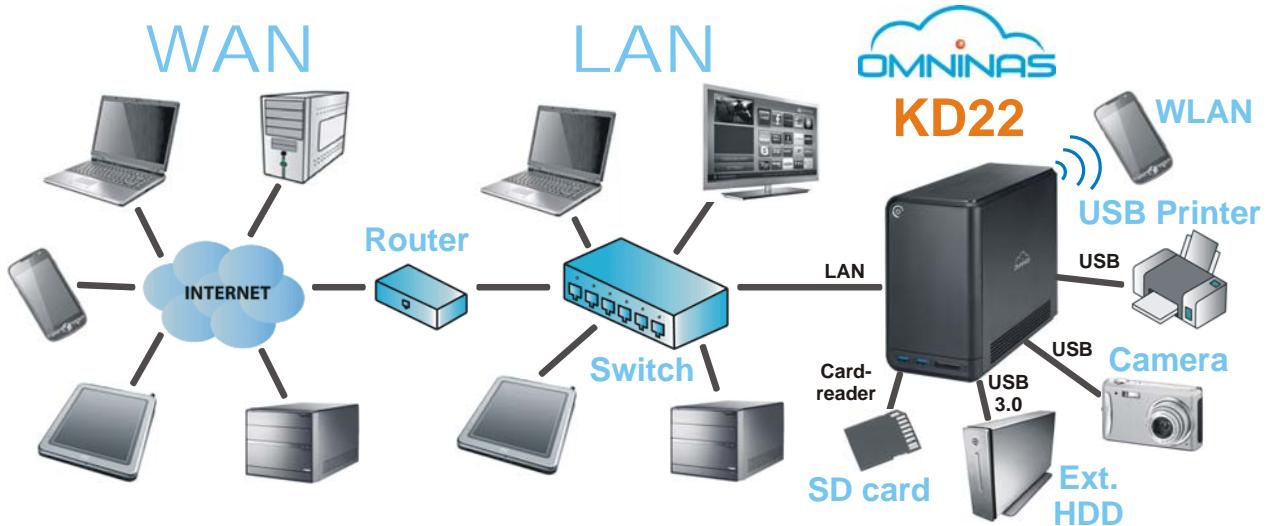
## Shuttle OMNINAS KD22 – Applications

### Internet (WAN)

Access your Home Cloud with your smartphone, tablet PC, notebook or stationary PC via the internet.

### Local Network (LAN)

Access your data, media files, backups and even your USB printer through your local network. Share your external hard disk and auto-copy your photos from the SD card.



### Store and Share the Great Moments in Life

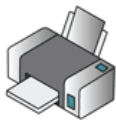


With OMNINAS KD22 you can easily store and share documents, personal movies and music as well as photos. Not only does it support access from personal computers, OMNINAS KD22 makes sure you have your files always with you – basically from any place in the world.



### Built-in Twonky Media Server

If you want to stream, rather than just store and share audio and video from your file server, OMNINAS KD22 comes with integrated Twonky media server and allows you to play multimedia files through XBOX, PS3 or media players on TV.



### Built-in printer server

With KD22 you can easily share your USB printer with any users in your local network. Simply connect the USB printer to the USB ports of KD22, share with the Finder software and you can print from anywhere in the house or office. No need to connect your printer directly to PCs.



### Share external hard disks and flash memory

The OMNINAS KD22 is also suitable for connecting external USB hard disks and SD flash memory cards, so that you can also share and save files from any PC in your network.



### The built-in card reader autcopies your photos and other data

You can enable the auto copy function on the SD card reader or USB 3.0 port by configuring the Auto Copy settings. Once enabled, you can insert a USB storage drive, a PTP camera via USB or the SD card from your camera and it will automatically copy the contents to the designated folder on the OMNINAS KD22. The process finishes with three audible beeps.



### Upload and share files from iPhone®, iPad® and Android devices

In the modern world, nothing is as important as reaching your data from anywhere. By using a simple app, you can manage your NAS, upload to, download and stream all of your media and files from iOS and Android devices on the go.



### Integrated Wireless LAN Access Point (WLAN AP)

It is not required to connect KD22 to a wired network and it is still possible to access all the stored data through your WLAN capable devices.

## Shuttle OMNINAS KD22 – Special Product Features

### LAN/Disk Performance



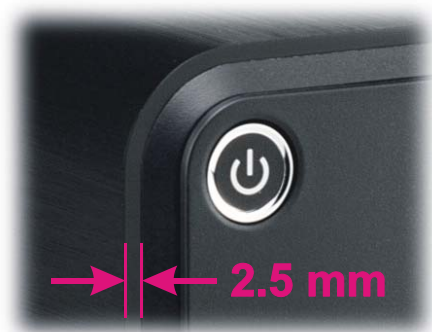
### Superior Performance

The OMNINAS KD22 provides high stability and delivers excellent performance with top read/write speeds of up to 110 MB/s & 75 MB/s while it also allows for up to 256 clients to be connected to the device at the same time. [1]

### Two bays provide various expansion modes

The OMNINAS KD22 supports 3.5" or 2.5" hard disks or SSDs with a maximum capacity of 4 TB (or more) for each drive. The drives are simple to install and configure. Depending on your specific requirements you can choose from several RAID modes:

- **Single disk with expansion capability:** install one disk permanently and you can add a second disk temporarily. You can always remove or replace the second hard drive, similar to as how external hard drives are used.
- **Combine the capacity of two disks with JBOD or RAID 0.** If you are using two identical HDDs, it is recommended to use RAID 0 for optimised performance.
- **RAID 1 (mirroring):** The data is duplicated on two physical disks. In the event of a single disk failure, the complete data is still available on the working disk. KD22 supports hot-swapping and auto-rebuild functionality without having to turn off the NAS.



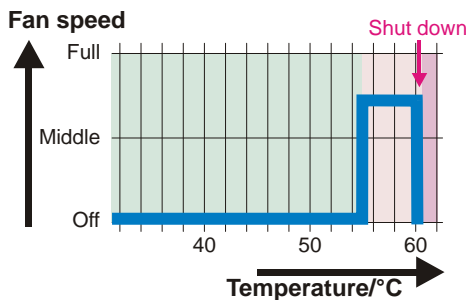
### Robust aluminium chassis with a clean and modern look

KD22 is built of a 2.5mm thick stylish aluminium housing that not only blends well with home environments, it moreover is of technical benefit - it is also increases the thermal performance of the device.



### Integrated WLAN function

The OMNINAS KD22 can be configured as Access Point (AP). You can connect to the OMNINAS with WLAN-capable devices e.g. PCs, notebooks, tablets or smart phones. The transmission can be secured by WPA2 encryption. With the built-in access point functionality you are independent from any wired networks and you can use KD22 in a more flexible way even outside your home.



### Reliable, cool and quiet

With the above in mind, the inside temperature doesn't increase easily. The fan will never turn on when the hard disks' temperature is below the threshold value of 55°C [2]. Should the uncommon case of higher temperatures arise, the large 70mm cooling fan starts spinning at a comfortably low speed to keep the system quiet.



### Two built-in Superspeed USB 3.0 ports and Card Reader

The OMNINAS KD22 features two USB 3.0 ports and one USB 2.0 port. USB 3.0 achieves a maximum data rate of up to 5.0Gbps (640 MBytes/sec) which is ten times faster than USB 2.0. USB 3.0 is fully compatible to USB 2.0. All USB ports support external devices like hard disks, flash drives, printers, digital cameras, etc. The memory can be shared across local networks. In addition, the built-in card reader reads your SD cards and shares such data with the NAS swiftly.



### Low power consumption

When using the OMNINAS KD22 in a home environment it likely rests most of the time in suspend mode and the average consumption should be more or less 9,6 W only. Based on this value, the annual consumption would amount to approx. 84 kWh which would mean just 17 Euros on the power bill (based on 20 Euro ct/kWh). Under normal load (idle mode), the KD22 consumes 19 W.



### Acronis True Image Backup Software

The OMNINAS KD22 comes bundled with a copy of Acronis True Image Personal Edition software. This utility provides powerful data backup capabilities that support full backups or selected backups of key files, enhanced flexibility and convenience of data backups.

Comparison: Shuttle OMNINAS Series

	KS10	KD20	KD21	KD22
Drive bays	Single Bay	Dual Bay	Dual Bay	Dual Bay
HDD support	6 TB	2x 4 TB	2x 6 TB	2x 6 TB
Processor	Marvell 88F6707 800 MHz	PLX7821 2x 750 MHz	Marvell 88F6707 1.0 GHz	Marvell 88F6707 1.2 GHz
Memory	256 MB DDR3	256 MB DDR2	512 MB DDR3	512 MB DDR3
Performance (R/W)	80 / 60 MB/s	75 / 55 MB/s	100 / 70 MB/s	110 / 75 MB/s
Chassis Material	Plastic	Alu + Plastic	Alu + Plastic	Alu + Plastic
Android / iOS Apps	Yes	Yes	Yes	Yes
RAID level	-	Raid 0+1	Raid 0+1	Raid 0+1
RAID 1 Hot Swap	-	Yes	Yes	Yes
USB 3.0	-	1	2	2
USB 2.0	2	2	1	1
SD card reader	1	1	1	1
Gigabit LAN (RJ45)	1	1	1	1
Wake-on-LAN (WOL)	Yes	-	Yes	Yes
802.3az Energy Efficient Support	Yes	-	Yes	Yes
WLAN 802.11n, Access Point	Yes	-	-	Yes
Simultaneous server services	Yes	-	Yes	Yes
DLNA / iTunes server	Yes	Yes	Yes	Yes
BT downloads	Yes	Yes	Yes	Yes
FTP Server	Yes	-	Yes	Yes
PTP (Picture Transfer Prot.)	Yes	-	Yes	Yes
Printer server	Yes	Yes	Yes	Yes
Auto-copy from USB / SD	Yes	Yes	Yes	Yes
Acronis Backup Software	-	since May'13	Yes	Yes
Online Firmware Update	Yes	-	Yes	Yes
2 HDDs in Single Mode	-	-	Yes	Yes
On/Off Scheduling	Yes	-	Yes	Yes
LED / FAN On/Off Switch	-	-	Yes	Yes
Power (standby / idle)	5.8 W / 11.9 W	9 W / 15.5 W	9,6 W / 19 W	9,6 W / 19 W



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## Shuttle OMNINAS KD22 Specifications

### Hardware

<i>Chassis</i>	<p>Robust, stylish 2.5 mm sandblasting aluminium combined with acrylic PMMA, color: black                  Dimensions: 170 mm (H) x 90 mm (W) x 225 mm (L) = ca. 3.44 litres                  Weight: 2716g                  Kensington Security Slot at the back panel (also called a K-Slot or Kensington lock) as a part of an anti-theft system</p>
<i>Storage Bays</i>	<p>Two storage bays (storage drives not included)                  Supports 6.4 cm (2.5") and 8.9 cm (3.5") drives                  Easy hard disk installation in two trays                  Appropriate screws are included                  Each bay with one hot swap button for RAID 1</p>
<i>Hard disk support and RAID levels</i>	<p>Supports two SATA storage drives each up to 6 TB (or more)                  Maximum total capacity of 12 TB and beyond                  Supports Hard Disk Drives (HDD) and Solid State Drives (SSD)                  Supports 6.4 cm (2.5") and 8.9 cm (3.5") drives                  Raid support: single disk(s) [4], RAID 0, RAID 1 (hot swap), JBOD                  Supports hard disk spin-down timer                  Supports check/format disk, SMART information report, disk usage status report                  Hard disks must support SMART temperature feature with temperature sensor</p>
<i>Network connector and IP setting</i>	<p>1x Gigabit LAN (RJ45, rear)                  Supports Wake-on-LAN (WOL) [5]                  Supports IEEE P802.3az Energy Efficient Ethernet (EEE)                  IP Configuration: Supports Static IP or Auto IP by DHCP server</p>
<i>USB Connectors</i>	<p>2x USB 3.0 (type A, front), supports Auto-Copy function                  1x USB 2.0 (type A, rear)                  All USB ports support external devices like hard disks, flash drives, printers, digital camera and USB hubs.                  Memory can be shared to local network.</p>
<i>Card Reader</i>	<p>Built-in card reader in the front panel                  Supports SD, SDHC and SDXC flash memory cards                  Supports Auto-Copy function</p>
<i>Buttons</i>	<p>Main power button with status LED                  Two Omni Touch Hot Swap buttons (for HDD1, HDD2)                  Reset button (hole, rear) for admin password reset</p>

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<p><i>LED Indicators</i></p>	<p>Status LED: dual colour (access/error: blue/red), can be turned off                  HDD1/HDD2 LEDs: dual colour (access/error: blue/red)                  USB 3.0 LED: single colour (access: blue)                  Card reader LED: single colour (access: blue)                  LAN speed LED (10/100 Mbps: green, 1000 Mbps: orange)                  LAN Activity LED (access/link: blinking green)</p>
<p><i>Integrated WLAN AP</i></p>	<p>Wireless LAN Access Point (can be enabled/disabled)                  IEEE 802.11 b/g/n (max. 54 Mbit/s)                  Encryption methods: WEP 64/128 bits, WPA, WPA2                  Frequency band: 2.4 GHz                  Bandwidth settings: 20 and 40 MHz</p>
<p><i>CPU, RAM and OS</i></p>	<p>Processor: Marvell 88F6707 1.0 GHz, ARMv7 compliant SOC                  DRAM memory size: 512 MB DDR3                  Operating system: Embedded Linux</p>
<p><i>Power Adapter</i></p>	<p>External 65 W AC/DC power adapter (fanless)                  Input voltage: 100~240 V AC, 50~60 Hz                  Automatic AC voltage adjustment                  Input current: max. 1.6 A (1.0 A) for 100 V (240 V) input voltage                  Output: 19 V DC, max. 3.42 A                  DC Connector: 5.5/2.5 mm (outer/inner diameter)                  Dimensions: 108 mm x 30 mm x 46.5 mm (without cable)</p>
<p><i>Cooling fan and temperature control</i></p>	<p>Ultra-quiet 70 mm cooling fan.                  By default the fan is not activated under normal temperature conditions.                  The following criteria depicts the system fan behavior dependent on the internal hard disks temperature:                  up to 54 °C: fan is off                  55~61 °C: fan is on                  62 °C and above: system shuts down                  The System also shuts down when the system temperature exceeds 65 °C. [2]                  Note: the fan can be set to non-stop operating mode, if desired</p>
<p><i>Accessories</i></p>	<p>Quick Installation Guide                  AC Power adapter (65 W) with AC power cord (plug depends on region)                  Ethernet cable, ca. 150 cm                  Driver CDROM with NAS finder software (Windows &amp; Mac) and documentation                  DVD with Acronis True Image Personal Backup Software                  Screws for hard disk installation</p>

## Functionality

<p><i>Web User Interface</i></p>	<p>Web User Interface                  The device settings are made through a web browser on a computer, which is connected to the same local subnet. Many languages are supported: e.g. English, German, French, Spanish, Italian, Dutch, Danish, Chinese, Japanese. The OMNINAS Web Interface is particularly user friendly thanks to its simple structure. The OMNINAS Wizard is your guide during the initial setup.</p>
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<i>Finder Software</i>	The OMNINAS Finder Software Tool is used to detect the OMNINAS system in the local network (within the same subnet). It can start the Web User Interface in your default browser and can map/unmap the internal and external storages of the OMNINAS to a drive letter of your PC.
<i>APPs for mobile devices</i>	You can use an App to upload and share files from iOS and Android devices. Just look for the appropriate "OMNINAS" app on one of these websites: Android: <a href="https://play.google.com/store/apps/details?id=com.shuttle.omninas2">https://play.google.com/store/apps/details?id=com.shuttle.omninas2</a> iOS: <a href="http://itunes.apple.com/nz/app/omninas/id543929833">http://itunes.apple.com/nz/app/omninas/id543929833</a>
<i>Networking Services</i>	Samba Server (SMB file sharing) with up to 256 share folders and up to 256 users FTP Server (File Transfer Protocol with SSL/TLS support) Apple File Protocol (AFP) Twonky DLNA Media Server iTunes Media Server Printer Server (supports USB printers) BT download (scheduled and without PC) External device sharing (via USB or card reader) NTP support for scheduled time synchronization (RTC integrated) Wake on LAN (WOL)
<i>System Services</i>	Firmware upgrade (online or offline) Time-Zone settings Factory reset function System log report
<i>Backup functions</i>	Quick Auto Copy for external storage USB 3.0, PTP[3] camera or card reader to NAS (Quick Copy) NAS to USB storage backup (scheduled or immediately) NAS to NAS backup (scheduled or immediately) Acronis True Image Personal Backup Software
<i>File Systems</i>	Internal: XFS External: EXT2, EXT3, EXT4, XFS, NTFS, FAT, FAT32
<i>System Requirements</i>	- Workstation OS: MS Windows XP SP3, Mac OS X 10.4, Apple Safari 3.0, Linux kernel 2.6.x or later - Smart phone OS: iOS 4.2, Android 2.3 or later - Browser: MS Internet Explorer 7.0, Firefox 3.x, Google Chrome, Apple Safari 3.0 or later - Router for Internet connection
<i>Standby Mode</i>	After a certain time of inactivity the system will enter power saving (standby) mode. This time can be set under: Settings - General - Power Saving Time Setting You can select a time from 10 minutes up to 5 hours.
<i>Power on/off functions</i>	Scheduled power on/off - simple configuration for each day of the week Power on after power fail (restores the previous state: on or off) Wake on LAN (WOL) [5]

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Reference values and compliance	
<i>Transfer Speed [1]</i>	Read data - from NAS to workstation: up to 110 MB/s Write data - from workstation to NAS: up to 75 MB/s Maximum number of concurrent connections: 256
<i>Power Consumption [1]</i>	Power off: 0.35W Power saving mode (suspend): 9.6 W Normal operating (no hard disk access): 19 W
<i>Operating temperature range</i>	Operating temperature range: 5~40 °C Relative humidity range: 10~90% (non-condensing)
<i>CE Compliance</i>	This device is classed as a technical information equipment (ITE) in class B and is intended for use in living room and office. The CE and WEEE marks approve the conformity by the EU-guidelines: <ul style="list-style-type: none"> <li>• EMC - guideline 2004/108/EC, Directive on Electromagnetic Compatibility</li> <li>• LVD - guideline 2006/95/EC, Directive on Low Voltage</li> <li>• ErP Lot6 - guideline 2009/125/EC, Directive on ecoconception of Energy related Products</li> <li>• RoHS - guideline 2002/95/EC, Directive on Restriction of Hazardous Substances</li> <li>• WEEE - guideline 2002/96/EC, Directive on The Waste Electrical and Electronic Equipment</li> </ul>
<i>Other</i>	<ul style="list-style-type: none"> <li>• CB (IEC 60950-1:2005 (2nd Edition))</li> <li>• FCC</li> </ul>

**Footnotes:**

[1] depending on the test environment

[2] the threshold temperatures are subject to change by firmware update.

The KD20's threshold temperature refers to the "Current internal temperature" provided by the SMART monitoring system. This temperature may be much higher than the "operating/ambient temperature" that is also mentioned in the hard disk specification. The KD20 only supports hard disks with SMART monitoring system and temperature sensor which all available SATA hard disks should support.

[3] Picture Transfer Protocol (PTP) - allows the transfer of images from digital cameras to computers and other peripheral devices without the need of additional device drivers. Modern digital cameras usually support this protocol.

[4] The single disk expansion function is designed to allow you to create additional storage space without changing your current single disk mode. The second disk is then recognized as "external drive". Please refer chapter "Storage Management" in the manual for further information.

[5] You can enable the Wake on LAN function in Web User Interface: Settings - General - Enable Wake-On-LAN. After Wake on LAN is enabled for your OMNINAS, you can switch off the OMNINAS and turn on over the network by using a WOL (Wake on LAN) application. For proper function, please do not interrupt the power supply from the OMNINAS. You will find the MAC address on the bottom of the OMNINAS device.