



# **NETAVIS**

## **Observer 4.4**

### **Server and Client Compatibility**



# NETAVIS Observer 4.4 Server and Client Compatibility

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# 1. Introduction

This document specifies the requirements (both hardware and software) for NETAVIS Observer servers and clients.

Observer is an open system based on standards and has been designed to run on hardware and operating systems of many vendors.

Target audience for this document are system builders and integrators who select hardware configurations for NETAVIS Observer implementations.

For the operating system-unbundled version of Observer please refer to the document *NETAVIS Observer OS-Unbundled Installation*.

## 2. Observer Server Compatibility and Requirements

### 2.1 Example server configurations for Observer editions

Below you find some example configurations for the various Observer editions.

**Please note:** The RAM suggestions assume a simple motion detection setup only and no heavy iCAT video analytics. If you plan to run iCAT video analytics several cameras, please add more RAM (up to double of the suggested size).

#### Core Edition (up to 12 cameras)

CPU: Intel: Pentium G6950, Xeon X3430

RAM: 4 GB DDR3

HDD: Western Digital RE4, Seagate Constellation ES

**Recommended server systems:**

Rack-Server	Tower-Server	Boxed Solution
HP Proliant DL 120	HP Proliant ML 110 (in AHCI mode) HP Microserver N40L 4GB-RAM (max ~10 cameras)	Thecus NVR 42 or NVR 46
DELL R210	DELL T110	Allnet Recorder for 4 cams

#### Basic Edition (up to 32 cameras)

CPU: Intel Xeon X3430, X3440, E3 1220

RAM: 4 GB DDR3

HDD: Western Digital RE4, Seagate Constellation ES

**Recommended server systems:**

Rack-Server	Tower-Server	Boxed Solution
HP Proliant DL 120	HP Proliant ML 110 (in AHCI mode)	Thecus NVR 88
DELL R210	DELL T110	

## Extended Edition (up to 64 cameras)

CPU: Intel Xeon E5520, X3450, X3470, E3 1220, E3 1240, E5 26xx, E5 1650

RAM: 8 GB DDR3 1333 MHZ

HDD: Western Digital RE4, Seagate Constellation ES

**Recommended server systems:**

Rack-Server	Tower-Server	Boxed Solution
HP Proliant DL 120,160, 180	HP Proliant ML 150 (in AHCI mode)	Thecus NVR 120
DELL R210, R310	DELL T310	Thecus NVR 160

## Enterprise Edition (unlimited cameras)

For questions about Enterprise projects please contact our project team [project@netavis.net](mailto:project@netavis.net).

## 2.2 Tested and compatible servers

### Tested server systems for Observer 4.X

These are some tested server systems that are compatible to Observer 4.0 (RHEL 5.5) and Observer 4.4.x (RH-EL6.2):

HP Microserver N40L (4GB-RAM, 4xSATA)

HP ML110 G3, G4, G5 (Intel-P4-HT, Xeon-Dualcore; 4xSATA)

HP ML110 G7 (4x SATA; WARNING: you will have to set in the BIOS AHCI-mode for the SATA controller configuration!)

HP ML350 G6 (6x SATA)

DELL Poweredge T105

DELL Poweredge T610

DELL Poweredge R610

ALLNET Allnet-Recorder (Recorder is fully set up, installed and licensed available from ALLNET)

Thecus (NETAVIS Observer can be activated in the Thecus GUI as a Thecus plugin):

Thecus NVR42

Thecus NVR46

Thecus NVR55

Thecus NVR77

Thecus NVR88

... many more – please check the server vendors' website to see if the server has a RedHat certificate!

## Server compatibility

Generally NETAVIS Observer is 100% binary-compatible to Red Hat Enterprise Linux (RHEL). Any server hardware that you are configuring must be compatible to the corresponding RHEL version:

Observer version	Red Hat Enterprise Linux compatibility
1.8.7 - 1.10.0	RHEL 4.4
1.10.1 – 1.12.4	RHEL 5.1
3.0.0 - 3.4.7	RHEL 5.2
3.4.8 - 3.4.21	RHEL 5.4
3.4.22 – 3.4.x	RHEL 5.5
4.0.0 - 4.3.x	RHEL 5.5
4.4.0 -	RHEL 6.2

The following link lists hundreds of different servers that are RedHat-certified and tested:  
<https://hardware.redhat.com/>

Here you can find OS compliance lists for some tested server vendors:

Allnet:

<http://www.allnet.de>

Dell:

[http://www.dell.com/content/topics/global.aspx/alliances/en/os\\_certifications?c=us&cs=555&l=en&s=biz&~tab=4](http://www.dell.com/content/topics/global.aspx/alliances/en/os_certifications?c=us&cs=555&l=en&s=biz&~tab=4)

Delta Computers:

<http://deltacomputer.de/index.shtml>

Fujitsu (formerly Fujitsu/Siemens):

<http://www.fujitsu.com/fts/products/computing/servers/primergy/>

HP:

<http://h18004.www1.hp.com/products/servers/linux/hplinuxcert.html>

IBM:

[http://www-03.ibm.com/systems/hardware/browse/linux/?cm\\_re=masthead-\\_products-\\_sys-linux](http://www-03.ibm.com/systems/hardware/browse/linux/?cm_re=masthead-_products-_sys-linux)

Oracle SUNServer: :

[https://shop.oracle.com/pls/ostore/f?p=700:2:0::::PROD\\_HIER\\_ID:368705418248091865179976](https://shop.oracle.com/pls/ostore/f?p=700:2:0::::PROD_HIER_ID:368705418248091865179976)

Thecus:

<http://www.thecus.com>

Depo Computers(Russia):

<http://depo.ru>

## 2.3 Configuring a server yourself

Generally, we recommend using a server from companies like HP, DELL, IBM, Fujitsu, Oracle-SUN, etc.  
For boxed preinstalled servers we recommend Thecus and Allnet.

These companies have a lot of knowledge and offer excellent products as well as provide support for many years. All vendors offer a hardware compatibility certificate to show the compatibility to our operating system (CentOS / Red Hat Linux)! Due to that an easy going and successful installation is guaranteed by the vendor.

If you want to create your own server, please use only 24/7 professional server hardware!

Do not use desktop components because they are not built for running in a 24/7 mode and don't provide redundant parts, don't have server-features like ECC, IPMP, Server-NIC's, hardware RAID, redundant fans and good airflow, etc.

### Mainboard

Server mainboard vendors which provide Linux certificates: Intel, Supermicro, Tyan

Before buying components for a self made system please check if these components support the correct version of Cent OS / RedHat (version: 6.2)!

### CPU

Supported vendors: Intel and AMD (optimized for Intel)

Multicore: supported

Multiprocessor: supported

Architecture: 64-bit supported

Limited performance with Intel Atom Dualcore CPUs

Not supported: Intel Atom single core CPUs

You can evaluate the CPU speed by checking benchmark points in CPU passmark.

### RAM

Up to 4 cameras: = 2 GB

Up to 32 cameras: = 4 GB

Up to 100 cameras: = 8 GB

#### Please note:

- These values are a good base for systems doing permanent recording tasks and simple-motion detection setups! In case you are setting up a system for video analytics (i.e. object tracking, people counting ...) please use more RAM. For RAM more than 4 GB RAM you need the 64-bit Observer (version as it is the standard for releases > 4.4.0).

### Network card

For professional systems we strongly recommend using 2 network interface cards (NICs) – one for the camera LAN and one for the client access user LAN.

Please use only server grade NIC's due to the fact that they are 24/7 proven parts which provide really full gigabit support (tested in our lab constantly with 900Mbit/s!). They don't slow down the CPU!

Recommended: INTEL Pro 1000

Minimum: 100 Mbit/s

Standard: 1Gbit/s (Recommended: Intel Pro 1000PT)

### Server Graphics card:

A simple 2D onboard graphics card is the minimum requirement (no 3d functions needed).

Multimonitor cards (multimonitor usage) in the server is not supported.

### Hardware-RAID controller

Generally NETAVIS Observer automatically creates a software RAID in systems with 2 or more hard disks for redundancy reasons. In such a case Observer mirrors everything except the recorded image data (i.e. the OS including all programs).

For a software RAID, the image database actually is distributed among the available hard disks. If you are satisfied with that, there is no need for a hardware RAID. We recommend using a hardware RAID in case you have more than 4 physical disks.

We recommend RAID controllers of Adaptec, HP, DELL, IBM, and 3Ware. Please check their web sites for compatibility to the OS of your NETAVIS Observer release.

- Supported DELL HW-RAID controllers of Observer 3.4.x, 3.5.x, 4.0, 4.1, 4.2, 4.3.x (CentOS 5) and 4.4.x (CentOS 6) are:
  - PERC 6/E SAS controller with RAID
  - PERC 6/I SAS controller with RAID
  - SAS 5/E controller with RAID
  - SAS 6/I/R SAS controller with RAID
  - PERC H800
  - PERC H700
- UN-Supported DELL HW-RAID controllers of Observer 3.4.x, 3.5.x, 4.0, 4.1, 4.2, 4.3.x (CentOS 5) and 4.4.x (CentOS 6) are:
  - S100
  - S300
  - ...
- Supported HP HW-RAID controllers of Observer 3.4.x, 3.5.x, 4.0, 4.1, 4.2, 4.3.x (CentOS 5):
  - E200 (with low read/write –speed performance)
  - P212
  - P400
  - P410
- Unsupported HP HW-RAID controllers of Observer 3.4.x, 3.5.x, 4.0, 4.1, 4.2, 4.3.x (CentOS 5):
  - B110i (works only in AHCI mode as normal SATA disk controller and not as HW-RAID controller)
  - ...
- Supported HP HW-RAID controllers of Observer 4.4.x (CentOS 6.2) are:
  - P212
  - P212i (RAID mode unknown)
  - P410
  - P410i (RAID mode unknown)
  - B110i (not fully tested, installation on HW-RAID 1 and 10 works, reliability and read/write -speed unknown)

## Internal hard disk drives

We strongly recommend server-grade hard disks!

Minimum: 1 x 80 GB

Standard: between 2 and max. 8 *logical* disk drives

Observer will automatically install a software RAID on the first 2 disks.

Further image storage disks can be added later on.

Suggested: Hardware RAID or external storage systems like SAN/NAS. Especially for server-grade systems we strongly recommend the use of a hardware RAID with RAID tools!

Unsupported:

- SSDs are not supported (no TRIM yet).
- Physical or logical (boot) devices greater than 2TB (UEFI BIOS needed, workaround: create a first disk having <=2TB )

## External storage

**NAS:** No optional drivers are required since everything is built in configuration via Admin menu.

Tested and certified:



NetApp FAS6070C with Data ONTAP 7.2 (operating as NAS) on a Fujitsu Siemens Rx300 with RedHat-EL4.4 and Observer 1.9 OS-unbundled

**SAN:** Currently SAN storage devices can only be handled in OS-unbundled installations (more info *NETAVIS Observer OS-Unbundled Installation*)

Tested and certified:

NetApp FAS6070C with Data ONTAP 7.2 (operating as SAN) on a Fujitsu Siemens Rx300 with RedHat-EL4.4 and Observer II 1.9 OS-unbundled

Tested:

HP- EVA8000 2C12D-A on a HP-DL380-G5 with RedHat EL4.4 and Observer II 1.9.0 OS-unbundled

**External SCSI storage:** If your SCSI controller is compatible to the Observer OS without additional drivers (see above), then you can use external SCSI storage with the OS-bundled version.

Tested: LSI 20320IE

## SMS sending device

Supported devices: Siemens TC35i, MC35i (via RS-232)

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## 3. Observer Client Compatibility and Requirements

### Client operating system

MS Windows: Windows XP, Windows Vista, Windows 7 (since Observer 3.4.9)

Linux / Unix: Any system that is capable of running a  
Mozilla-compliant web browser and Java runtime  
environment 5 or higher (see below).

Limitations:

Some features currently are only available on MS Windows platforms (e.g. MPEG4, H264, MxPEG, optimized viewing speed, joystick support, Layout Navigation tool, AVI export).

### Client web browser

Windows: IE 5 or newer, Firefox, Netscape, Opera, Linux: Firefox, Mozilla, Netscape, Konqueror

### Client JAVA environment

JAVA must be installed to start the NETAVIS Observer client. Supported: SUN Java Runtime Environment 6 (=JRE 1.6.0 and 7 (=JRE 1.7.0 >= update4).

Recommended: SUN Java Runtime Environment 6 update 32 Not recommended: JRE 1.6.0\_19 until 1.6.0\_24

### Client .NET environment:

.NET 2.0 or newer must be installed for the Layout Navigation tool

### Client RAM (memory)

The required RAM depends on your operating system and other running applications.

### Client hard disk

Apart from the standard Java Runtime installation, no additional disk space is required for the web-based client. You can also use the locally installed client what will require approx. 20 MB of your hard disk space.

### Joystick

Supported: USB joysticks. Examples: Axis 295, Megatron MACH V 551A15, JVC HFX1400

### Graphics card

Minimum: Resolution 1024x768 pixels, 24 bit color. Multi-monitor graphics cards are supported.

Several graphic card vendors have been tested, and all worked – there are no special needs.

This also comes due to the fact that we do not need special 3D support (just 2D support).

Tested quad-monitor card: PNY-Quadro-NVS440 PCI-Express, Matrox Parhelia,

### Monitor

Minimum resolution 1024x768 pixels.

### Audio support

A soundcard is helpful for receiving acoustic system messages.

For audio operations like listening to a camera sound or communication with the camera a soundcard with connected loudspeakers and microphone is required.

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## 4. Mobile client

### Apple iPad

Download the app from the Apple appstore.

You can test the Mobile client at our show room <http://showroom.netavis.net> (Login: guest / guest)

Features: View camera tree and live streams.

In future releases we will also support archive playback and event viewing.

### Smartphone client (for iPhone, Android, and Windows mobile)

Start the application by opening the browser on your mobile phone and type in:

**`http://<server-address>/browserclient`**

For iPhone: Safari-browser or other HTML5-capable browser

For Android: Chrome or other HTML5-capable browser

For Windows mobile: HTML5-capable browser

Additional information can be found in <http://jquerymobile.com/gbs>. The browser must also support MJPEG.

**Note:** You can test the Mobile client at our show room <http://showroom.netavis.net> (Login: guest / guest)

Features: View camera tree and live streams

### Old Apple iPhone app

The iPhone app is supported until NETAVIS Observer 4.3.x and is no longer in 4.4.x and newer releases.

Use the Smartphone client instead (see above).

## 5. Client on Server (CoS) configurations

Please note: A client on server setup needs more CPU power and RAM than a server-only installation.

### Client on Server hardware

Please use professional server-grade hardware.

#### CPU:

- ) Recommended: Fast server processors with at least two cores (Intel-Xeon, Intel-Core2Duo, AMD-Opteron)!
- ) Not recommended: Single core processors like some Intel-Celerons
- ) Not supported: Intel-Atom Singlecore CPUs

#### RAM:

- ) Recommended: minimum 2GB-RAM; better: 4GB-RAM
- ) When using 4GB RAM you have to use a NETAVIS Observer version with 64-bit technology.

#### Frontside bus (FSB)

- ) The server's FSB must have at least 800MHz

#### Hard disk:

- ) The minimum hard disk write speed performance should be at least 40MB/s or better.

#### Hard disk controller:

- ) Pay attention when using entry-level hardware RAID controllers – they are sometimes slow!

### Client on Server configuration examples

- 1.) Server with Intel 2GHz Dualcore
  - 16 cameras with permanent recording and live-viewing are possible.
  - No iCAT functions (like object tracking and counting), no simple motion detection activated.
- 2.) Server with Intel 2GHz Dualcore
  - 10 cameras with permanent recording and simple motion detection and live-viewing are possible.
  - No iCAT functions (like object tracking and counting) activated.
- 3.) Server with Intel 3GHz Dualcore
  - 16 cameras with permanent recording and simple motion detection and live-viewing are possible.
  - No iCAT functions (like object tracking and counting) activated.
- 4.) Server with Intel 3GHz Quadcore
  - Up to 20 cameras with permanent recording, simple motion detection, live-viewing and iCAT functions are possible.

The above mentioned configurations are recommendations to simplify your project planning and to make sure that your system works properly. Here are some factors, which result in additional CPU load or memory consumption and thus would reduce the possible number of cameras per server.

- Several cameras are configured with many motion detection fields.
- Additionally to the running client on the server, there are several other clients connected.
- Several cameras configured with high mega pixel resolutions.
- The FPS amount of permanent and motion detection recordings.
- Several active iCAT functions.