DIGIFORT®
IP Surveillance System

System Specifications

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GOAL OF THIS DOCUMENT

This document is to provide guidelines on minimum requirements of the hardware & software to be used when considering, specifying and installing DigiFort IP Surveillance System.

OPEN HARDWARE

DigiFort supports and encourages the use of open hardware, meaning you can use network switches, computers & server grade components from any brand name manufacturer that meet the DigiFort's minimum requirements described within this document.

RAID STORAGE

Although not required, RAID is highly recommended to prevent data-loss. DigiFort is compatible to use with any version of raid storages. Keep in mind, RAID can improve disk read/write speeds on heavily loaded systems (40 cameras and above per server).

Common Practice:	2 x 160GB in RAID 1 (mirror OS 160GB usable)	(drive C:\)
	7 x 750GB in RAID 5 (storage vol1 4.5TB usable)	(drive E:\)
	7 x 750GB in RAID 5 (storage vol2 4.5TB usable)	(drive F:\)

NOTE: How you setup and use the RAID is up to each individual and what they feel is the best solution for their needs. Above is a simple common example of how RAID 1 & RAID 5 are used & setup on a single 16 bay server.

All RAID types are supported, here is a list of more commonly used RAID types;

- RAID 0, RAID 1, RAID 5, RAID 6, RAID 1+0, RAID 5+0, RAID 6+0

For more information on raid, please visit http://en.wikipedia.org/wiki/Redundant_array_of_independent_disks

NETWORK ATTACHED STORAGE (NAS)

NAS is not recommended to use with DigiFort, due to fact, it adds unnecessary load onto the network. Also, due to the multiprotocol it requires, and the reduced CPU and OS layer, the NAS has its limitations compared to the attached storage systems. Certain NAS devices fail to expose well-known services that are typical of a file server, or enable them in a way that is not efficient. Examples are: ability to compute disk usage of separate directories, ability to index files rapidly (locate), ability to mirror efficiently, and to enumerate huge file hierarchies at the nominal speed of local drives and induces considerable network traffic.

For more information on NAS, please visit http://en.wikipedia.org/wiki/Network-attached_storage

If you still wish to use NAS devices, ensure you have adequate bandwidth available, and even use a secondary network card from server to free up bandwidth from the primary incoming network card. (see NIC & Load Balancing below) Ensure that you test each NAS device for several days & that it is storing the data properly & efficiently from DigiFort. Base your tests on continuous recording.

DIRECTLY ATTACHED STORAGE (DAS)

The main protocols used in DAS are ATA, SATA, SCSI, SAS and Fibre Channel. Traditionally, a DAS system enables storage capacity extension for a server, while keeping high data bandwidth and access rate. A typical DAS system is made of one or more enclosures holding storage devices such as hard disk drives, and one or more controllers. The interface with the server or the workstation is made through a host bus adapter (HBA).

DigiFort highly encourages the use of directly attached storage with RAID.
For more information on Direct Attached storage, please visit http://en.wikipedia.org/wiki/Direct-attached_storage

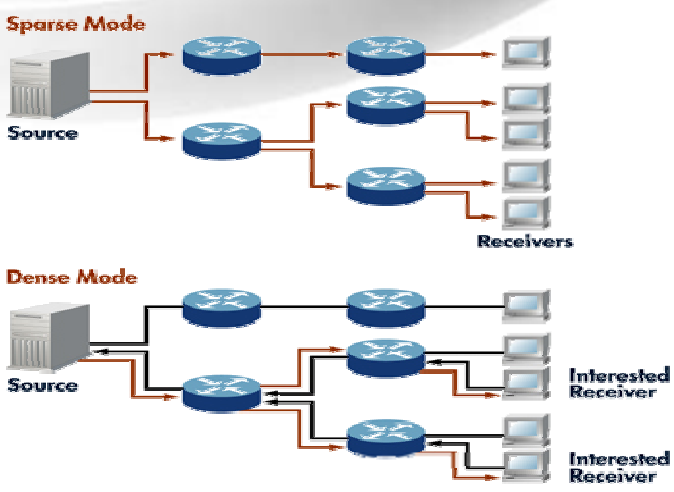
MULTICAST

Multicast addressing is a network technology for the delivery of information to a group of destinations simultaneously using the most efficient strategy to deliver the messages over each link of the network only once, creating copies only when the links to the multiple destinations split.
For more information on Multicasting, please visit http://en.wikipedia.org/wiki/Multicast

Digifort versions 6.3 and above, supports multicast functionality.

NOTE: For efficient multicasting, a more intelligent switch will be required. So called “Layer 2” switches, need Internet Group Management Protocol (IGMP) to be enabled, only then will the switch forward multicast traffic out of requested ports, instead of flood behavior out of every switch port. For multicast to span subnets & vlans, a Layer 3 network switch may be required, to route traffic from one network or vlan to another. Layer 2 switches cannot perform this function without a router, however layer 3 switches generally have routing capabilities within (router within switch).

CAUTION: Most switches, even home grade switches, will be capable of multicasting. However they do not manage the multicast properly, causing the switch to flood like a hub, saturating your network with data and causing drop outs, blocky video & even seizing completely, and may affect the entire connected network where IGMP is not enabled.



Network Interface Cards (NIC) & Load Balancing

Network card bottlenecks can and will slow down the transmission and processing of data across the network. Also, they represent potential points of failure. To avoid points of failure, installing multiple NIC's into a server can provide the following benefits;

1. **Load Balancing**
   Example: NIC1 receives streams from cameras on 10.0.0.0/24 network, NIC2 provides client connections and video on 192.168.1.0/24 network.
2. **Improved Throughput**
   Example: NIC1 receives streams from cameras on 10.0.0.0/24 network, NIC2 receives streams from 10.1.1.1/24 network. This can be useful with megapixel cameras requiring large amount of bandwidth for a small number of cameras. Approximately, a 3MP camera, at 12fps, uses up to 55Mbps.
3. **Failover**
   Example: NIC1 & NIC2 can be "teamed", so if 1 fails the other takes over using the same IP address. NIC cards have to have this feature available. Most servers with dual on-board NIC's support this feature. Intel NIC's are well known for supporting teaming.

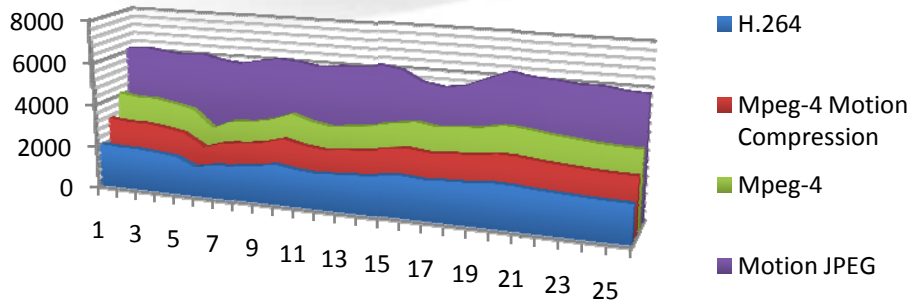
Gigabit Links

As a rule, always use minimum 1 Gigabit connection in between;

1. Workstation to Switch
2. Switch to Switch
3. Server to Switch

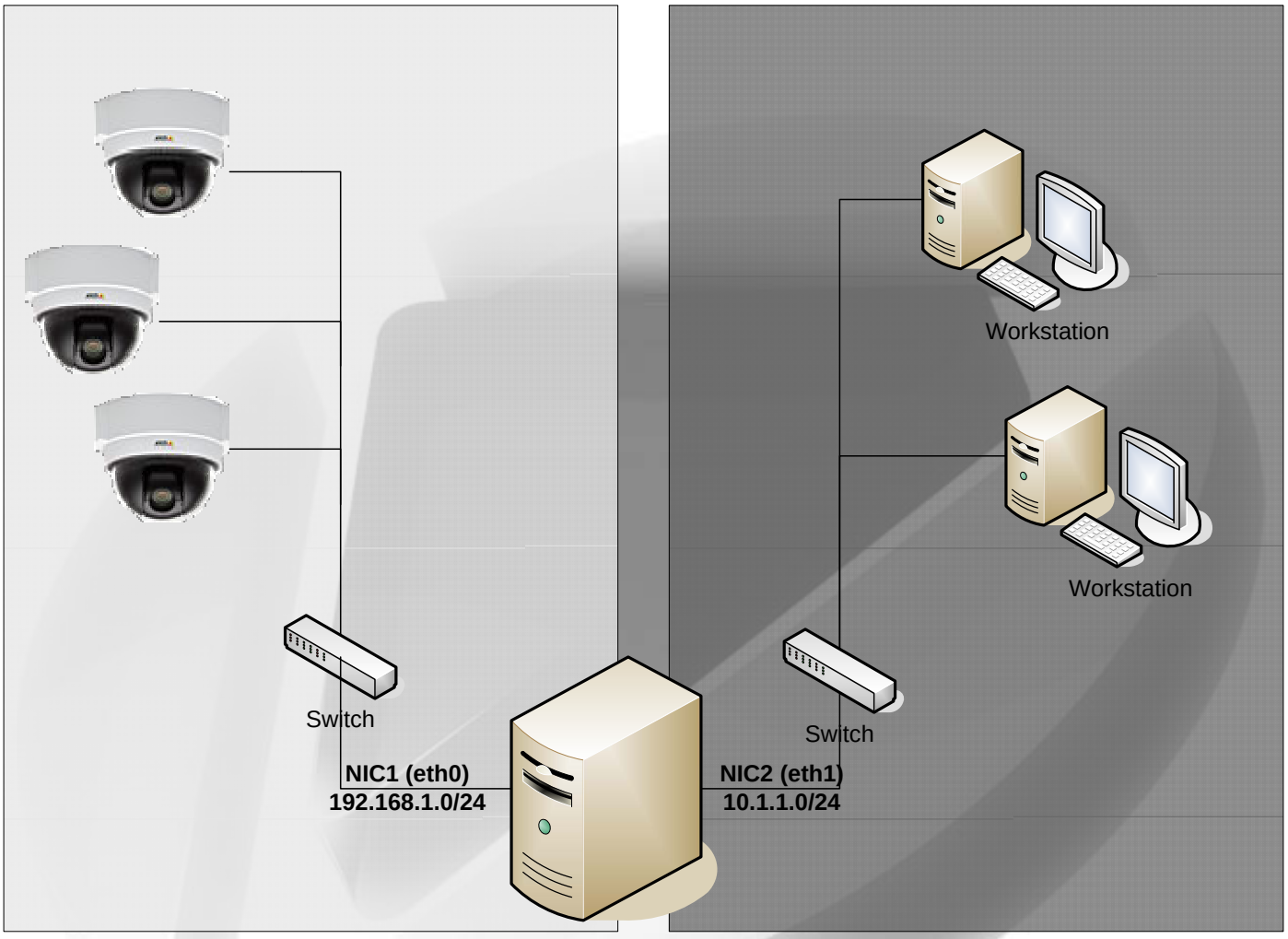
NOTE: By having a gigabit network, you are also ready for expansion of the CCTV network if need be.

Generally; 4CIF 25fps is 4Mbps 4CIF 12FPS is 2Mbps
2CIF 25fps is 2Mbps 2CIF 12FPS is 1Mbps
The above, can be used to calculate bandwidth requirements for MPEG4, but not megapixel, H.264, & MJPEG streams & resolutions.



Example Network Diagram of using 2 Network Cards For Traffic Control

The below diagram is just an example, and for such a small system, this would not be necessary. Consider using this method of traffic control when your system reaches 40+ cameras per server.



Server Part of 2 Networks
192.168.1.0/24 – INCOMING FROM CAMERAS
10.1.1.0/24 – OUTGOING FOR WORKSTATIONS

Operating System Requirements

Supported OS

DigiFort has been tested to work with the following Microsoft Operating Systems;
Windows 2003 Server (RC2 Recommended)
Windows 2008 Server
Windows XP Professional (Any Service Pack – SP3 Recommended)
Windows Vista (Home/Professional/Business)

NOTE: 64 bit Windows editions will work, although DigiFort is a 32 bit application.

Best Practice

To optimize the performance of windows read/write & hard-disk-drive read/write speeds. DO NOT use the windows hard-drive for camera recordings. Please leave windows hard-drive just for windows. DO NOT partition the OS hard-drive then use the partition for recording.

All recording should go to any other physical hard-drive but not the OS hard-drive.

Server PC Requirements

Servers generally just record from cameras and allow connections for users. Servers are not to be used for video viewing & playback.

NOTE: Specifications are based on 704x576x25fps motion recording. Motion uses more CPU power.

CPU Selection

8 Cameras:	P4 3.4Ghz
16 Cameras:	Core 2 Duo E6400
32 Cameras:	Core 2 Quad Q9450
40 Cameras:	Core 2 Quad Q9650 or Quad XEON 3.0Ghz 1.333Mhz FSB
RAM:	2GB
VGA Card:	Standard
Hard Drive:	DigiFort installation & logs use less than 100mb. Storage drives you can have as many as windows will support.
NIC:	Minimum 1 x 1 gigabit LAN
CD/DVD:	Optional

Scenario: To record 200 cameras at 704x576x25fps on motion recording, you will need 5 servers with Quad XEON 3.0Ghz CPU's 40 cameras per server.

Client PC Requirements

Workstation/client system requirements only, not to be used for recording streams.

8 Cameras:	P4 3.4Ghz
16 Cameras:	Core 2 Duo E6400
32 Cameras:	Core 2 Quad Q9450
40+ Cameras:	Core 2 Quad Q9650 or Quad XEON 3.0Ghz 1.333Mhz FSB
RAM:	2GB-4GB (depends on number of cameras displayed at once)
VGA Card:	Late model GeForce or ATI PCI Express 256/512MB
Hard Drive:	DigiFort installation & logs use less than 100mb.
NIC:	Minimum 1 x 1 gigabit LAN
CD/DVD:	Optional

Video Display Rate VS CPU Model

P4 3.4Ghz	6	Streams	at 4CIF 25FPS or	12	Streams	at 4CIF 12FPS
	12	Streams	at 2CIF 25FPS or	24	Streams	at 2CIF 12FPS
	24	Streams	at 1CIF 25FPS or	48	Streams	at 1CIF 12FPS
Core 2 Duo E6400	12	Streams	at 4CIF 25FPS or	24	Streams	at 4CIF 12FPS
	24	Streams	at 2CIF 25FPS or	48	Streams	at 2CIF 12FPS
	48	Streams	at 1CIF 25FPS or	96	Streams	at 1CIF 12FPS
Core 2 Quad Q9450	20	Streams	at 4CIF 25FPS or	40	Streams	at 4CIF 12FPS
(and above)	40	Streams	at 2CIF 25FPS or	80	Streams	at 2CIF 12FPS
	80	Streams	at 1CIF 25FPS or	160	Streams	at 1CIF 12FPS

NOTE: Keep in mind that new processors are coming out frequently and this information will be outdated. Please use as a general guide. Generally, the CPU's can handle more, but it depends on other factors such as RAM, graphics card and video stream type (jpeg/mpeg/h264/etc). We have specified a smaller amount of streams to be safe, but the CPU's can probably handle several more.

Combo: Server/Client PC Requirements

All in 1 system, can record up to 40 cameras, but view only 16 cameras at 1 time.

40 Cameras:	Core 2 Quad Q9650 or Quad XEON 3.0Ghz 1.333Mhz FSB At this point you may want to consider a more powerful server utilizing dual-xeon quad core technology (2 x cpu xeon 2.4ghz and above [8 cores / logical cpu's]).
RAM:	3GB
VGA Card:	Late model GeForce or ATI PCI Express 256/512MB and above
Hard Drive:	DigiFort installation & logs use less than 100mb. Storage drives you can have as many as windows will support.
NIC:	Minimum 1 x 1 gigabit LAN
CD/DVD:	Optional

Windows & Server Pre-Requisites (Preparing Windows For DigiFort)

Please ensure your Windows is;

1. Compatible with DigiFort.
2. Meets minimum requirements of DigiFort in terms of memory and CPU speed.
3. Has 1 gigabit LAN port available. (gigabit LAN is required for all servers/workstations)
4. Has the latest security updates installed.
5. Has the latest Service Packs installed.
6. Has all the required hardware drivers installed.
7. All power saving options are disabled.
8. Firewall must be switched off. (ensure your anti-virus software firewall is also disabled)
9. Storage hard-drives for footage are on separate physical disks from windows.
10. Setup your anti-virus software according to instructions in this document below.

DigiFort Software Installation Pre-Requisites

Please ensure;

1. Your Windows & Server meet specifications
2. The license for DigiFort has been arranged.
3. You have all devices working such as storage arrays, NAS, iScsi, etc.
4. Your network is ready to go.
5. Your cameras are powered & setup accordingly.
6. You have all necessary usernames & passwords.

Video Display – VGA Cards & Monitor Connectors

Minimum recommended resolution to use on DigiFort clients is 1024x768 at 32bit color. DigiFort can support multiple monitors. It will work on as many monitors Windows is able to detect. Use DVI or HDMI connections on high resolution monitors for optimum results & best quality (such as full HD 1920x1080 resolution).

DigiFort recommends you use and/or specify ATI or NVidia PCI Express graphics cards, with at least 128/256MB minimum of memory.

NOTE: Intel & S3 Graphics Card – are not recommended to be used in workstations/clients. These graphics cards generally do not perform well for high display rate/frame rate. These however, can be used in servers that record the streams only.

NETWORK REQUIREMENTS

INTRODUCTION

DigiFort IP surveillance software utilizes standard based TCP/IP networks, home to enterprise grade switches & wireless link technologies available from variety of network product providers.

Depending on the application and network specifics, DigiFort uses the following protocols for command and control and video transport:

- TCP/IP Unicast
- UDP/IP Unicast
- RTP/UDP/IP
- RTP/RTSP/TCP/IP
- HTTP/TCP/IP
- RTP/RTSP/HTTP/TCP/IP
- RCP +3

NETWORK DESIGN CONSIDERATIONS

Common considerations that should be taken into account when designing your network:

1. SIZE AND SCOPE:
   - Will DigiFort reside on a Local or Wide Area Network?
   - What is the connection type between the different sites (if any)?
   - Is access via the Internet required?
   - Is Multicast required, or can you use unicast efficiently?

2. BANDWIDTH REQUIREMENTS:
   - How many IP cameras/encoders will you connect to DigiFort?
   - Will you be using dual-streaming encoders or IP cameras? If so, what is the total number of video streams your network will need to support?
   - What is the total number of multicast video streams your network will need to support?
   - Which compression formats and quality settings will your encoders/IP cameras use?
   - What is the typical bandwidth utilizations associated with these settings? How will the expected level of motion (or PTZ movement) affect those values?
   - Estimate your systems expected bandwidth utilization. For large systems, consider partitioning the network into subnets/VLANs to distribute the traffic in the most efficiently way across switches and routers. Keeping the number of devices per subnet to a reasonable size is generally a good thing to do; irrespective of whether video is being deployed.

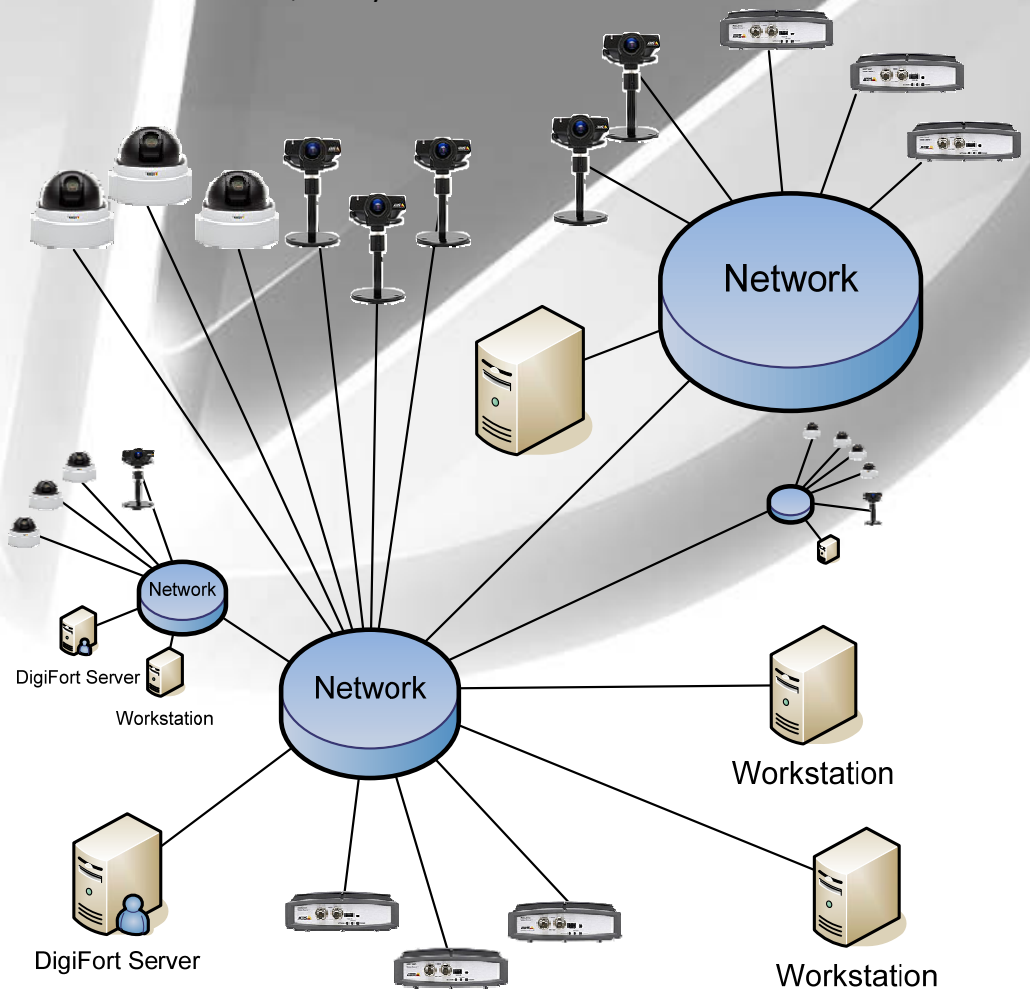
3. OTHER NETWORK USERS AND APPLICATIONS:
   - What percentage of the network's bandwidth can you "dedicate" for use by the video security system?
   - Is the network protected by a firewall?

4. DigiFort Servers/Attached Storage Considerations:
   - Where will the servers/storage be located?
   - Will the servers have enough bandwidth when activated?
   - How do I design the network with redundancy and/or fail-over?

5. Power Over Ethernet Considerations:
   - Are PoE cameras/encoders a present requirement?
   - Are PoE cameras/encoders a future requirement?
   - Which PoE switches to use?

6. Wireless Considerations:
   - Is any part of the network wireless?
   - How many channels are available per wireless access point?
   - Consider Wireless link bandwidth and utilisation capacity.

7. E-mail Requirements:
   - Do the system's users wish to use the e-mail notification capabilities of DigiFort? If this is the case, the system must have access to an SMTP server.



ENCODER TYPES

There are many encoders available on the market. Single stream, dual stream even triple stream encoders, and these can be multi-codec. Dual stream encoders are the most popular as they allow a recording rate and a separate viewing rate.

EXAMPLES OF ENCODER/IP CAMERA TYPES;
(please note: new encoders are constantly released; not all encoder types are mentioned below)

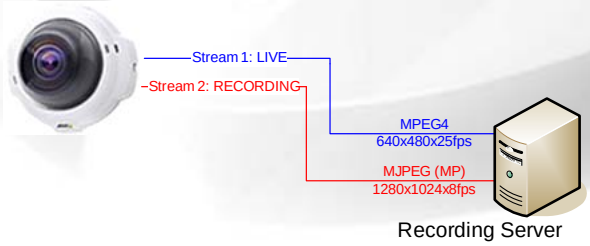
Single Stream Encoder

- Multi-codec (mpeg4 & mjpeg)
- 1 stream per channel
- 1 codec per stream
- Live view same as record (unless mjpeg)

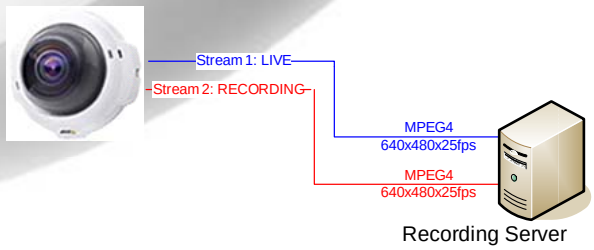
Dual Stream Encoder

- Multi-Codec (mpeg4, mjpeg & h.264)
- 2 Streams output per video channel
- 1 Codec per stream
- Combination of codecs allowed
- Stream 1 can be 4cif 25fps for viewing (mpeg4)
- Stream 2 can be 2cif 12fps for recording (h.264)

DUAL STREAM EXAMPLE (multi codec)



DUAL STREAM EXAMPLE (same codec)



ANTI-VIRUS TIPS

This section describes DigiFort's recommendations for users who wish to install an anti-virus software on a computer (client or server) running the DigiFort software. Customers should be aware that a variety of anti-virus software is available; therefore full set of instructions can not be provided, but only a recommendation guide.

The following recommendations below, assume that the DigiFort software is installed to the default path set by the DigiFort Installer.

When configuring the anti-virus software

- Disable the firewall included with the anti-virus software.
- Configure rules for Real time scans and Scheduled scans.
- Exclude the following locations for the client and server :
  - The DigiFort system folder (e.g. C:\Program Files\DigiFort\)
  - The Windows Paging file (e.g. C:\pagefile.sys)
- Exclude the following locations for the server:
  - The drives or folders used for video storage (e.g. Y:\Camera1, Z:\Cameras)

NOTE

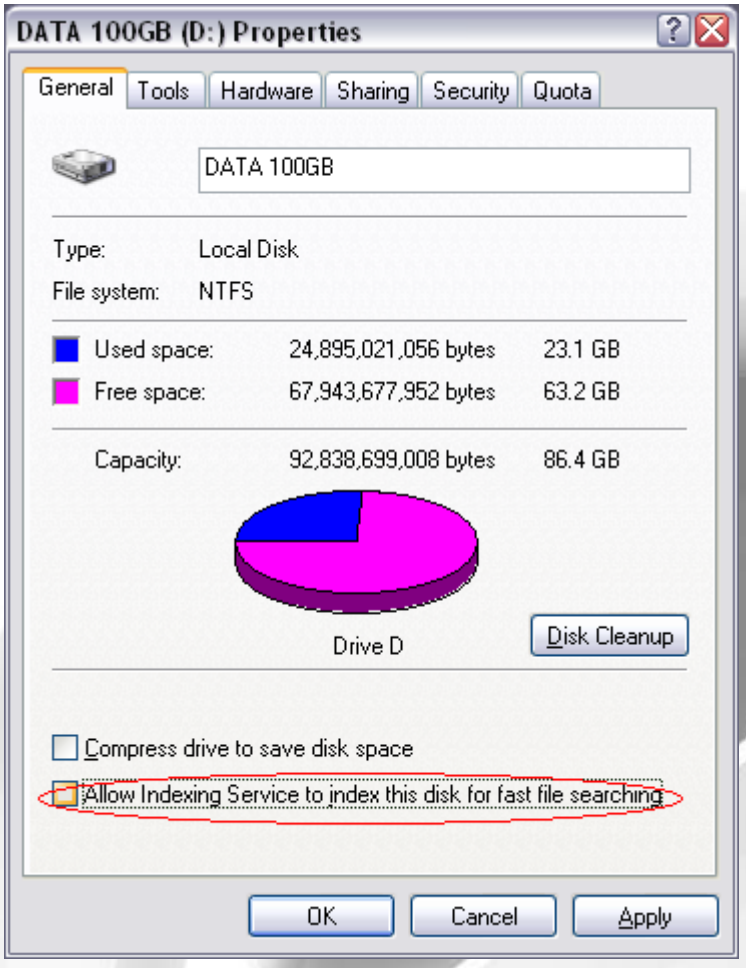
- A common mistake is configuring exclusions for Auto-Protect, and forgetting to exclude scheduled and manual scans.
- Another common mistake is specifying the wrong path to the actual DigiFort folders that need to be excluded. For example: you may exclude "C:\Program Files\DigiFort\" when the actual installation path is "E:\Program Files\DigiFort\".

While the scenarios here are given with the default installation path, please remember that the DigiFort installation path can be modified by the user during the installation.

IMPORTANT The above steps will improve read/write speeds of data to the hard-drive. Usually, anti-virus software will scan files on read & write access, therefore disabling the locations that get accessed frequently through DigiFort, will improve performance.

WINDOWS INDEXING

To improve disk access read/write speed, it is recommended to disable windows indexing on all storage volumes used to save camera data.



What is Indexing Service?

Indexing Service is a base service for Microsoft® Windows® 2000 or later that extracts content from files and constructs an indexed catalog to facilitate efficient and rapid searching.

http://msdn.microsoft.com/en-us/library/ms689718(VS.85).aspx

Indexing puts un-necessary load on the server, and disabling this function will improve hard-drives read/write speed as well as free some cpu load.

Software Development Kit (SDK)

DigiFort has SDK available allowing you to connect to DigiFort server, obtain live video streams as well as playback. More information on the SDK is available through the SDK document and will be issued upon request. Most common use of DigiFort SDK is to integrate video from DigiFort into another software application such as access control system.

Open Platform

DigiFort IP Surveillance solution doesn't lock you into a particular manufacturer's camera product range, because of this; it is called "Open Platform". Supporting well over 520 different IP camera models, standard & megapixel, from different manufacturers, this makes DigiFort unique and open. New cameras are being integrated on a daily and project basis utilizing all stream types MPEG4, MJPEG, Wavelet & H.264.

Licensing Options

DigiFort comes in 3 software versions; Standard, Professional & Enterprise
For DigiFort versions comparison, please visit http://www.digifort.com/en/comparison_table.php

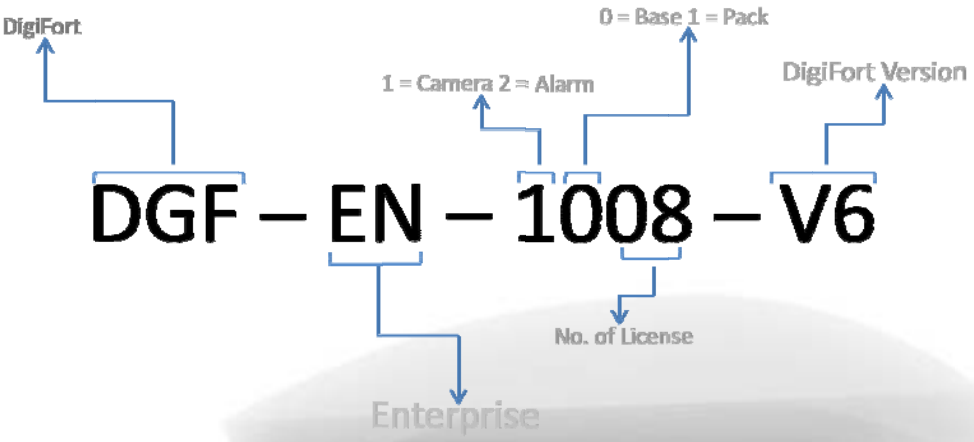
Licensing consists of a BASE licenses, camera licenses, alarm licenses & video analytics licenses. Each BASE license includes some camera licenses as well.

NOTE: EXPLORER version of DigiFort is not available for distribution. Alarm license is for use only with COMMBOX product. Camera alarm inputs/outputs can be used with a normal camera license; you do not need alarm license unless you are using COMMBOX.

It is possible to start with Standard/Professional version of DigiFort & upgrade to higher versions of Professional & Enterprise of DigiFort.

Standard Base	**(4 cameras included, up to 32 cameras total)**
Camera Pack	2,4,8,16 additional cameras
Base Upgrade	to Professional Base of 8
Pack Upgrade	to Professional Pack of 2,4,8,16
Base Upgrade	to Enterprise Base of 8
Pack Upgrade	to Enterprise Pack of 2,4,8,16
Professional Base	**(8 cameras included, up to 64 cameras total)**
Camera Pack	2,4,8,16,32 additional cameras
Alarm Board Base	Base for Management of 1 alarm board (up to 6)
Alarm Board Pack	Pack for 1,2,4 additional alarm board
Base Upgrade	to Enterprise Base of 8
Pack Upgrade	to Enterprise Pack of 2,4,8,16,32
Enterprise Base	**(8 cameras included, up to unlimited)**
Camera Pack	2,4,8,16,32,64 additional cameras
Alarm Board Base	Base for Management of 1 alarm board (unlimited)
Alarm Board Pack	Pack for 1,2,4,8,16,32,64 additional alarm board

UNDERSTANDING LICENSES (PART NUMBERS)



Item Number	Product Description
DGF-EN1008-V6	Enterprise - Base system for Management of 8 cameras
DGF-EN1102-V6	Enterprise - Pack for Management of 2 additional cameras
DGF-EN1104-V6	Enterprise - Pack for Management of 4 additional cameras
DGF-EN1108-V6	Enterprise - Pack for Management of 8 additional cameras
DGF-EN1116-V6	Enterprise - Pack for Management of 16 additional cameras
DGF-EN1132-V6	Enterprise - Pack for Management of 32 additional cameras
DGF-EN1164-V6	Enterprise - Pack for Management of 64 additional cameras
DGF-EN2001-V6	Enterprise - Base for Management of 1 alarm board
DGF-EN2101-V6	Enterprise - Pack for 1 additional alarm board
DGF-EN2102-V6	Enterprise - Pack for 2 additional alarm boards
DGF-EN2104-V6	Enterprise - Pack for 4 additional alarm boards
DGF-EN2108-V6	Enterprise - Pack for 8 additional alarm boards
DGF-EN2116-V6	Enterprise - Pack for 16 additional alarm boards
DGF-EN2132-V6	Enterprise - Pack for 32 additional alarm boards
DGF-EN2164-V6	Enterprise - Pack for 64 additional alarm boards
DGF-EX1004-V6	Explorer-Base system for Management of 4 cameras
DGF-EX1102-V6	Pack for Management of 2 additional cameras
DGF-EX1104-V6	Pack for Management of 4 additional cameras
DGF-EX1108-V6	Pack for Management of 8 additional cameras
DGF-PR1008-V6	Professional - Base system for Management of 8 cameras
DGF-PR1102-V6	Professional - Pack for Management of 2 additional cameras
DGF-PR1104-V6	Professional - Pack for Management of 4 additional cameras
DGF-PR1108-V6	Professional - Pack for Management of 8 additional cameras
DGF-PR1116-V6	Professional - Pack for Management of 16 additional cameras
DGF-PR2001-V6	Professional - Base for Management of 1 alarm board
DGF-PR2101-V6	Professional - Pack for 1 additional alarm board
DGF-PR2102-V6	Professional - Pack for 2 additional alarm boards
DGF-PR2104-V6	Professional - Pack for 4 additional alarm boards
DGF-ST1004-V6	Standard - Base system for Management of 4 cameras
DGF-ST1004-V6	Standard - Base system for Management of 4 cameras
DGF-ST1004-V6	Standard - Base system for Management of 4 cameras
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DGF-ST1004-V6	Standard - Base system for Management of 4 cameras
DGF-ST1004-V6	Standard - Base system for Management of 4 cameras
DGF-ST1102-V6	Standard - Pack for Management of 2 additional cameras
DGF-ST1104-V6	Standard - Pack for Management of 4 additional cameras
DGF-ST1108-V6	Standard - Pack for Management of 8 additional cameras
DGF-ST1116-V6	Standard - Pack for Management of 16 additional cameras
DGF-UP-EXST1004-V6	Upgrade Explorer to Standard Base of 4
DGF-UP-EXST1102-V6	Upgrade Explorer to Standard Pack of 2
DGF-UP-EXST1104-V6	Upgrade Explorer to Standard Pack of 4
DGF-UP-EXST1108-V6	Upgrade Explorer to Standard Pack of 8
DGF-UP-PREN1008-V6	Upgrade Professional to Enterprise Base of 8
DGF-UP-PREN1102-V6	Upgrade Professional to Enterprise Pack of 2
DGF-UP-PREN1104-V6	Upgrade Professional to Enterprise Pack of 4
DGF-UP-PREN1108-V6	Upgrade Professional to Enterprise Pack of 8
DGF-UP-PREN1116-V6	Upgrade Professional to Enterprise Pack of 16
DGF-UP-PREN1132-V6	Upgrade Professional to Enterprise Pack of 32
DGF-UP-STEN1008-V6	Upgrade Standard to Enterprise Base of 8
DGF-UP-STEN1102-V6	Upgrade Standard to Enterprise Pack of 2
DGF-UP-STEN1104-V6	Upgrade Standard to Enterprise Pack of 4
DGF-UP-STEN1108-V6	Upgrade Standard to Enterprise Pack of 8
DGF-UP-STEN1116-V6	Upgrade Standard to Enterprise Pack of 16
DGF-UP-STPR1008-V6	Upgrade Standard to Professional Base of 8
DGF-UP-STPR1102-V6	Upgrade Standard to Professional Pack of 2

About DIGIFORT Digital Surveillance System

To meet the growing demand for integrated and automated systems designed specifically for digital or analogical camera monitoring, storage and management, the Digifort System, presents a new concept in "digital governance", which completely transforms the way companies or small businesses address the area of patrimonial security and personnel security.

Making use of the most advanced concepts of digital intelligence in the area of monitoring and patrimonial security, the Digifort System embarks upon a new era of active and passive monitoring of security cameras, where the resources of visualization and storage of images go beyond the physical boundaries of the company, being offered in a distributed and accessible manner by way of the most diversified means of communication used by the organization.

Marketed in four different versions, the Digifort System offers features according to the type of project and the number of cameras involved in the solution. A set of functions will be available to the client for each version which will agree to the usage profile for which the product will be used.

General Description of the Monitoring and Recording Software

Monitoring and recording software for closed circuit TV based on TCP/IP with ability to control and visualize IP or analog camera images connected to video servers or coders, as well as record images for later look-up and selective retrieval. The software has a Windows-based graphics-friendly interface and screen display, functions, menu, help screens and manuals in Portuguese language.

Advantages

- FLEXIBILITY By way of a remote Internet access to the image server, the Digifort System allow accesses from virtually anywhere, offering great user mobility when visualizing and retrieving his camera images.
- SCALABILITY Guarantees expansion of the number of cameras with no physical or logical limitation on behalf of the system.
- COMPATIBILITY The Digifort System was designed with the purpose of offering total compatibility with a great variety of IP cameras of various brands and also preserve and make use of devices such as analogical cameras and video servers.
- PERFORMANCE Designed with Multi-Processing technology (Multi-Threaded), it can make use of multiple processors.
- INTEGRATION The Digifort System allows the integration of alarms by way of the cameras' inputs and outputs and by way of connected alarm boards.
- IP TECHNOLOGY The use of IP Technology by the Digifort System is in line with the market's dominant platforms, making IP SURVEILLANCE solutions even more considered as the most adaptable, most reliable, and least susceptible to technological obsolescence than any other solutions.

- GENUINE NATIONAL SOFTWARE Designed for the needs of the Brazilian market with greater ease of support. It's available in three languages (Portuguese, English, and Spanish).
- EVENT MANAGEMENT Ease of organization and documentation of events that occur in the monitoring system, including the archiving of video footage for later look-up.
- FRIENDLY AND EASY-TO-UNDERSTAND INTERFACES it has interfaces that are operator and administrator friendly. The monitoring and administration interfaces have separate programming, being that the monitoring system has an operator-oriented interface that must be intuitive and simple for the layman operator, and that the system administrator interface offers a complete vision of the system, by way of a list of the tree-view type much used by administrative systems.

Architecture and Security

- Based on "IP Surveillance" (IP Monitoring) technology, it allows for the use of IP cameras, video servers and alarm boards of different manufacturers.
- The system is based on client/server architecture.
- Has complete user management.
- Supplies system usage and server performance reports.
- Built-in web server.
- Allows simultaneous operations, such as recording, reproduction, system configuration, live monitoring, event enquiry, image look-up, etc.
- Supports recording and monitoring in Motion-JPEG, MPEG-4, WAVELET, and H.263.
- Has Multi-Streaming and Multi-Processing system.
- Allows the use of any image resolution.
- Has an IP filter feature.
- Have user groups that allow the application of the same permission configurations to all of the users belonging to the group.
- The system has global camera configuration tools, whereby the administrator can apply the same configuration to a group of cameras at the same time.

Image Recording

- It supports recording and live visualization speeds of up to 30 FPS per camera, recording by manual or external events and/or movement detection.
- Supports scheduling of recording by time and day of the week.
- Allows the recording or video transmission to be done only in the case of an event, saving bandwidth and disk space.
- Has a feature for increasing the recording frame rate in case of movement detection in the images.
- Has digital certification of the images, which guarantees their authenticity.
- Has an intelligent disk management system.

Image Monitoring

- Has monitoring assistance tools such as screenshot, camera icons, digital zoom, full-screen, and interactive menus.
- Has camera and mosaic sequencing and the creation of mosaic formats.
- Allows the increase of the frame rate of a specific camera.
- Has real-time motion detection during live monitoring.
- Simultaneous (digital) zoom of different parts of the screen.
- Allows the visualization of cameras of various servers in the same screen.

Synoptic Map

- Has a synoptic map for live monitoring.
- Displays information about the devices, informing the devices' status by way of visual indicators.
- Allows cameras to be opened by clicking on their icons on the map.
- Allows cameras to be positioned in pre-determined presets with a simple click.
- Allows a different map to be opened, by way of a link, transforming it into a map of levels.
- Allows all of the map's cameras to be opened at the same time by way of a single command.
- Various JPG images can be used as background of the map.
- PAN / TILT / ZOOM (PTZ) CONTROL
- Has control of PTZ cameras and camera presets and allows PTZ vigilance.
- Allows control of PTZ cameras by way of USB joystick or virtual joystick.
- Has PTZ blocking by priority.
- The PTZ system allows control of focus, shutter, auto-focus and auto-shutter as well as allows Absolute and Relative control of cameras with these modes.

Video Reproduction, Exportation and Look-up

- Allows the synchronized reproduction and exportation of video footage of various cameras simultaneously.
- Has a time-bar of recorded images, which shows the points where recordings and/or motion exist.
- Has look-up of motion in the recorded images.
- Exports video footage to removable media in AVI and Events CD formats.
- Makes it possible to print a certain photo of video reproduction with a description, the date and the time of the event.

Alerts & Events

The system has complete administration of alarms and events, in that it recognizes alarms of any dry-contact device that is connected to the cameras or video servers. This alarm administration includes the following functions:

- The system allows manual alarm measures to be taken.
- The system takes pro-active measures upon detection of motion in cameras in pre-defined hours or in case a camera goes down.
- The system offers scheduling of external alarm recognition by camera.
- The system has the ability to record images when an event occurs, offering the possibility of transmitting only the images of the alarm event.
- The system allows different alarm sounds.

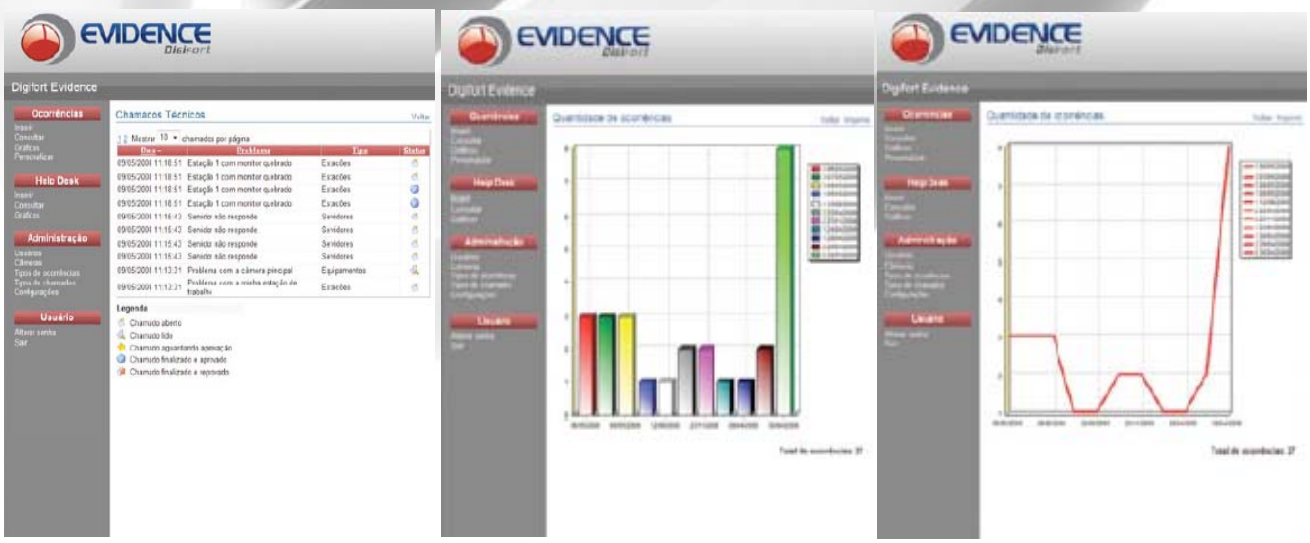
ADMINISTRATION

- Allows remote administration and dynamic configuration in realtime.
- Allows application of configurations in common to a set of cameras simultaneously.
- Has a calculator to aid in the dimensioning of disk space for recordings.
- Allows monitoring of the server by way of historical graphs with information about usage of processor, memory, connected users and input/output traffic.

DIGIFORT EVIDENCE SOFTWARE

This is a separate software application that's talks to the Digifort System, which allows classification and documentation of the events that occur in the monitoring system, including the archiving and organization of video and any files related to the event for later look-up, generation of administrative and statistical reports.

With Digifort Evidence, the client can reduce his image archiving costs, reduce event look-up time, reduce maintenance time of the equipment involved in monitoring, have greater availability of information related to the event, have better organization of documentation of these events, and have a clearer vision of the facts.



To view complete document of DigiFort Evidence, please visit
http://www.digifort.com/downloads/Digifort - Evidence - En.pdf

TECHNICAL SUPPORT

First point of contact should be your reseller, as they may have the answers required. Only upon the request of your reseller should you contact DigiFort directly. In most cases, the reseller will contact Digifort on your behalf. This way, the reseller will be educated to deal with previously unknown issues, therefore improving the support to their clients/customers.

For distributor/reseller technical support & questions, contact the DigiFort technical support team through email/phone according to your region.

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