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SPx

Linux Screen Recorder

Features

- X Windows Screen Recorder
- Records up to 2600 x 1600 resolution
- Captures full screen
- Single or dual head displays
- Record to local or remote file system
- Programmable capture rate
- Lossless compression
- Uses standard COTS components
- Performance set by hardware
- Cost-effective solution
- Ease of installation
- GUI control or server configuration
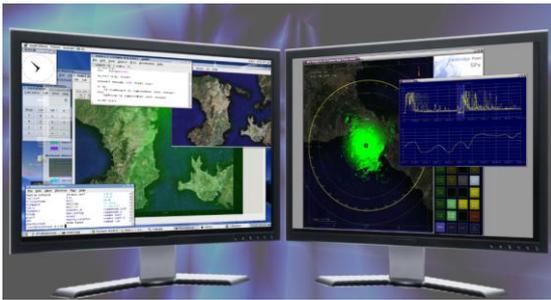
SPx Screen Recorder provides a software-based screen capture and record capability for X Windows. The software runs as a server application and captures the screen at a programmable rate. The captured data is compressed and stored to a local or remote file.

The capture rate is programmable and can be set to balance CPU demands with other applications.

Capturing the video has no effect on the operation of other graphics applications, nor do those applications have to co-operate with the capture process. SPx Screen Recorder runs as an X client application, with no direct interaction with other applications running on the machine.

The available performance in terms of frames per second depends on screen resolution, number of display heads and available CPU/graphics resources that can be allocated to the task. Example figures are provided overleaf.

Why Software Screen Recording?

Software-based screen recorders offer a number of system benefits over hardware-based units. Although expensive hardware units may offer higher capture rates, the per-screen recording cost is considerably higher and the systems engineering associated with the additional cabling, buffering and interconnection adds complexity and cost to the system installation.

The software solution has a much lower total cost of ownership, and provides the option of system upgrades and performance enhancement simply through the replacement of standard processing modules. The SPx Screen Recorder is high performance and designed for command and control applications where the screen might contain a combination of graphics, radar and video data. The compression algorithms are designed to work with this mixed mode data.

Compression

A 1600 x1200 screen image at 32 bits per pixel consumes 7.7Mbytes per frame. SPx Screen Recorder employs compression algorithms to reduce the output data rate, whilst preserving lossless or captured data. The exact compression achieved is data dependent, but is typically in the region of 2:1 to 5:1 for a multi-function console display comprising video, radar and graphics. Much higher compression ratios are achieved for normal workstation graphics without real time radar or video display.
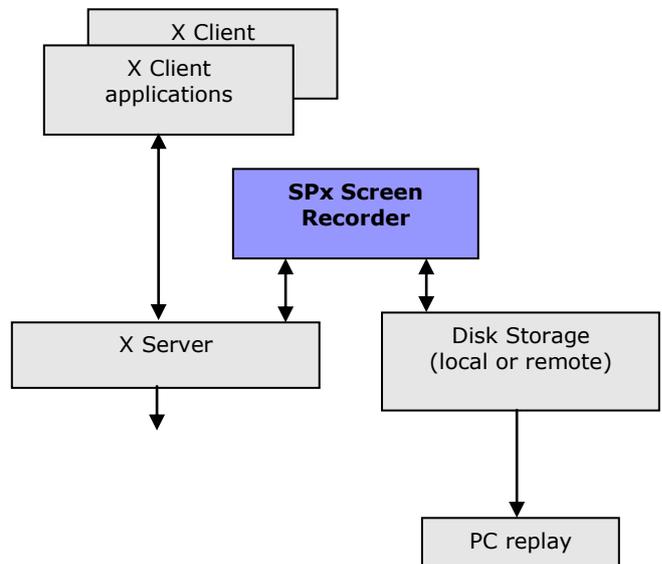
SPx Screen Recorder Summary Specification

Functional

Screen Resolution:	Programmable up to 2600 x 1600
Capture area:	Full screen
Configuration:	Command-line start up, configuration file
Platform:	x86 with Linux (for other platforms consult factory)
Record Modes:	Continuous (start/stop on request)
Timestamp:	Every frame time stamped with system clock

Compression

Format:	Lossless compression
	Proprietary compression designed to provide high-compression of Static graphics (from user-interface) and real-time video, such as Radar, sonar or TV video.

System Requirements

X Server	X.org based X11 server with high-performance graphics card (nVidia)
Processor	x86-based processor, ideally multi-core.
Operating System:	Linux (for other operating systems consult factory)

Storage

Storage type	Uses disk-based storage, which may be on a local or network file system
File format	Proprietary file format

Performance

Screen Resolution	Frames per second	Frames per second for maximum 20% CPU/GPU utilisation
1024 x 768	40	8
1280 x 1024	25	5
1600 x 1200	20	4
1920 x 1200	15	3

The table above shows captured frames per second for different screen sizes. Each screen is captured in full 32-bits per pixel RGB format. The test hardware is a Pentium 4, 3 GHz processor running Linux FC6 and an nVidia 7600GT graphics card with an X.org X11 server.

The quoted frames per second in column 2 provide the maximum available capture rate. The final column shows the capture rate for 20% CPU utilisation, leaving the remaining 80% of the CPU for other display functions.

Replay

Replay Options	Linux-based replay software
Display	Replay one or both screens
Graphical Overlays	Overlay time of day, text message.

SPx from Cambridge Pixel

SPx is a set of interoperable software components for radar processing, distribution and display. Other modules in the SPx family include radar compression, network distribution, radar processing and scan-conversion. Contact us for more information on the whole product family.

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