

GV STRATUS

Video Production & Management System



Modular video production and content management toolset for ingest, editing, distribution, archive and retrieval management. User benefits include better efficiency through workflow automation, ease of use, and scalability — all combining to make GV STRATUS a prime enabler for producing more content, faster.

The GV STRATUS System from Grass Valley, a Belden Brand, is the most complete and versatile application environment for nonlinear production. Developed to adapt to the rapidly changing business, operational and technology needs of the modern media enterprise, GV STRATUS is a flexible, evolvable software-centric approach that changes the way creative talent works together to efficiently produce rich, high-value content.

GV STRATUS provides a unified, expandable foundation for new applications and workflows. The tools within the GV STRATUS application framework can be adopted in an almost infinite number of combinations, meaning GV STRATUS can be tailored to studio production, play-to-air, news and many other broadcast and video production environments. GV STRATUS works not only with K2 media servers and storage, but also with qualified third-party storage solutions — providing customers the storage flexibility they expect from a modern production system.

Operationally, GV STRATUS opens a new user experience paradigm, with the potential to break down the traditional silos of users, technologies and tasks. Individual users can tailor their GV STRATUS desktop environment according to the task at hand. At the workgroup level, GV STRATUS enables collaborative workflows where everyone has access to every clip on the network with the tools required to manage content. In this way, GV STRATUS allows the media enterprise to optimize workflows by consolidating roles for efficiencies, while at the same time enabling team and cross-organizational collaboration.

GV STRATUS version 6.0 introduces Social Media Management, GVRE Transcoder, and the new Storage Manager, which allows for a complete commodity-based system. With migration packages users can ensure a smooth seamless transition to the cutting edge GV STRATUS 6.0.

Speed Matters. Edit without Boundaries.

In a typical newsroom, speed is everything. First on the scene, first on-air — and now most importantly — first on social media. GV STRATUS was built with a growing file architecture, this allows processes to run back-to-back without ever waiting for the previous process to finish.

For example, if an editor wants footage of the live feed, they can start the record and immediately start editing in full resolution or proxy resolution over WiFi. While the editor is viewing the material, they have real-time marker and metadata updates from the entire newsroom floor. So, when something notable happens the newsroom can simply place a marker on the timeline which shows up immediately to the editor with full frame accuracy. Now the editor is working with material that was recorded seconds ago while receiving updates from the producer live on their timeline.

First to Air, First to Social Media.

The producer just found a video online relating to the live feed, and they start downloading to a folder on the desktop. Once the download completes, it is automatically imported and transcoded by GV STRATUS. Once the transcode process starts, the growing file architecture takes over again. As each frame of video is transcoded, it is immediately available

to high-resolution and low-resolution editors. Not only editors, but playout servers as well. Which means the 10-minute file the producer just imported can be played back in less than one minute. Now the producer can be the first on-air with this footage. But their job isn't done yet.

The editor is using the same downloaded footage in their project and they just started exporting. Again, the growing file workflow allows the producer to play back the proxy of the finished project within seconds of the export starting. The producer is confident the video is fine for social media so without even waiting for the export to finish they click the "Breaking News" button on GV STRATUS. Immediately, the package is sent to YouTube, Facebook and Twitter.

Again, as the application exports, it writes the frame of video to disk, then it is uploaded to all social media sites. It is also worth noting that this producer is also the line producer of the room. And only the line producer can press the "Breaking News" button.

KEY FEATURES

Asset Management

- User permissions provide access rights and control for groups and users to read, write, delete or be denied access to media content
- User permissions can also be applied to any metadata field in the system, including custom fields:
 - Manage and protect your valuable content with permissions tailored to every user or group in your facility
- Manage assets by configuring bins/folders to best suit particular workflows; create GV STRATUS Groups to manage production assets in "Virtual Folders" the way you want to organize your media
- High-resolution or proxy access to shared storage content:
 - Three standard proxy compression qualities available, up to 720p HD, as standard
 - Custom proxy sizes are supported, from 320x280 to 1920x1080 resolution, up to 15 Mb/s
- 32-channel audio proxy support (for proxy files scavenged by GVRE Transcoder)
- Powerful search functions — including search for "Is Empty" in all fields
- Set and monitor file system-based quotas

Metadata Management

- Create custom panels for logging assets live or post event
- Play assets and add markers and keywords
- Efficiently assemble and edit playlists
- Storyboard editing with instant on-air playback
- Review, create and add metadata

Social Media Management

- Prepare and publish assets to popular social media platforms such as Facebook, Twitter and YouTube, then track and manage your content from within GV STRATUS
- Rules engine foundation enables auto-rule actions to automate workflow tasks

NRCS Integration

- Assignment list tools with linkage to a wide range of NRCS and playout via GV Rundown

Ingest

- Growing file workflows end-to-end, including through GVRE Transcoder — getting any content into production and to air quicker than anyone else
- Feed ingest scheduler with read-only mode for non-ingest operators
- User-friendly operations of K2 media server channels
- Transfer scheduler facilitates the pre-planned movement of content to offline or removable storage, or to other network destinations

- Live streaming proxy monitoring of input and output of K2 channels
- Populate and ingest files from multiple removable media devices

Automation

- Rules engine allows user-friendly set up of automated workflows to transfer, export, import, transcode and delete assets, according to specific criteria
- Manage transfer, import and export of files, including integration with file transfer acceleration solutions, such as Aspera FASP protocol
- Import/export QuickTime, MXF and GXF files
- Export native H.264 proxy with up to 1920x1080 resolution without transcoding
- Thanks to our integration with Aspera, media can be transferred across geographically distributed locations via the FASP high-speed transport mechanism

Editing

- Choice of mainstream craft editors: Grass Valley EDIUS, Adobe Premiere Pro CC, Avid Media Composer (standalone, with Avid ISIS or Avid Interplay) and Apple Final Cut Pro 7
- EDIUS XS editing of proxy assets with offline media — allows low-resolution editing of assets still in the archive
- WAN-based workflows that enable multisite media processing from GV STRATUS clients across distributed facilities and from remote field locations

Project Management

- EDIUS Project Management: Browse through and search for EDIUS projects and contained sequences from the GV STRATUS navigator
- Share work/projects among different editors
- Import standalone EDIUS projects as GV STRATUS-managed projects

API Integration

- RESTful API available to third parties for new tool/application development — support of licensing and support agreements with selected partners and system integrators

Virtualization

- End-to-end virtualization allows GV STRATUS systems to be supplied as VMWARE ESXI images and run on approved customer-furnished hardware and ESXI server infrastructure

High Availability

- Intelligent background resource management to balance the load between service providers such as transcode engines, proxy encoders, archive providers, FTP transfer servers, etc., so that system resources are always optimized and system administrators can monitor system load

Tools

The premium web client experience further simplifies user operation of GV STRATUS with smooth and easy to understand interfaces.

GV STRATUS provides an application framework in which each user can decide what tools to use and how to arrange them on their screen. The design of GV STRATUS means that common components can easily be re-used within new tools, minimizing the impact of adding new features and workflows to the product, and reducing the training load on your operators. GV STRATUS provides access to these tools through a windows-based client application; there is also an HTML5 web client available with access to a subset of the following tools.

The brand new HTML5 client, built from the ground up on fast, responsive elements used in leading consumer-based sites, sets a new standard for usability. The GV STRATUS HTML5 Web Client is built for all platforms to allow for frame-accurate streaming and markup, no matter where you are or on what device you are on.

The current set of GV STRATUS tools include:

Navigator

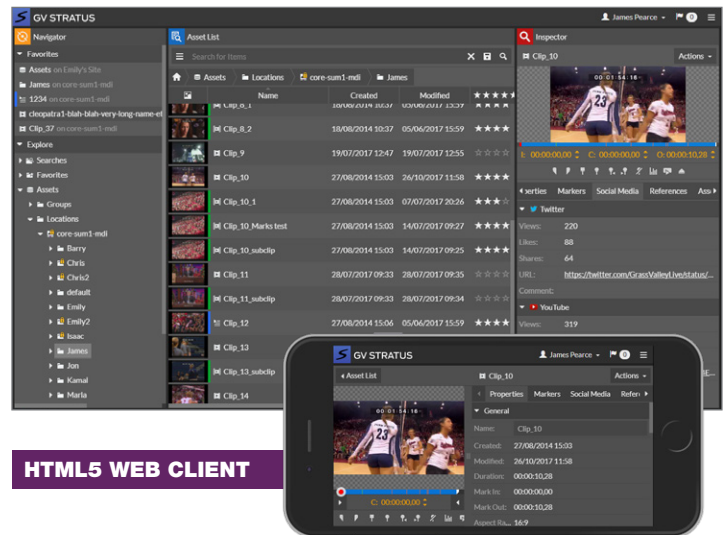
- Explore assets and projects in GV STRATUS system (local or remote)*
- Explore all files on user file system
- Import/export/transfer
- Explore devices under GV STRATUS control including archive systems*
- Explore tools available to the GV STRATUS user
- Manage and explore saved searches and favorites*

Permissions

- Access control (read, write and delete) for users and groups on a per-bin, per asset and per metadata field level
- Specific (read, write and delete) access controls are provided for markers and segmentations against assets

Inspector

- Play video/audio of any clip or ingest event — full-resolution or proxy*
- Monitor up to 64 channels of audio, with audio tagging, solo and mute control*
- Contour ShuttlePRO support
- Review/create/add metadata including asset markers and keywords*
- View asset relationships, including asset relationships to social media versions*



HTML5 WEB CLIENT

Playlist Editor

- Create and modify playlists

Storyboard Editor

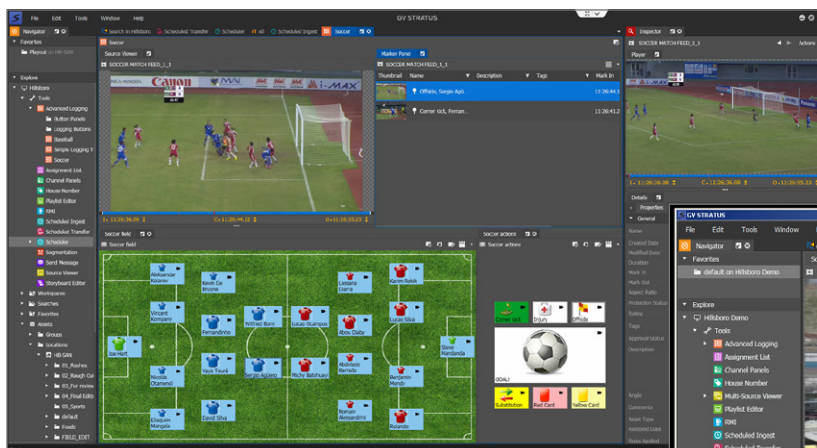
- Cuts-only editing with easy drag-and-drop interface
- Save finished job as playlist to GV STRATUS storage for playout on K2 Summit or K2 Solo — without rendering
- Rough cuts can be directly opened by EDIUS, Final Cut Pro 7 and Premiere Pro

Segmentation Tool

- Create multiple segmentation profiles per asset
- Segment assets live or after the fact

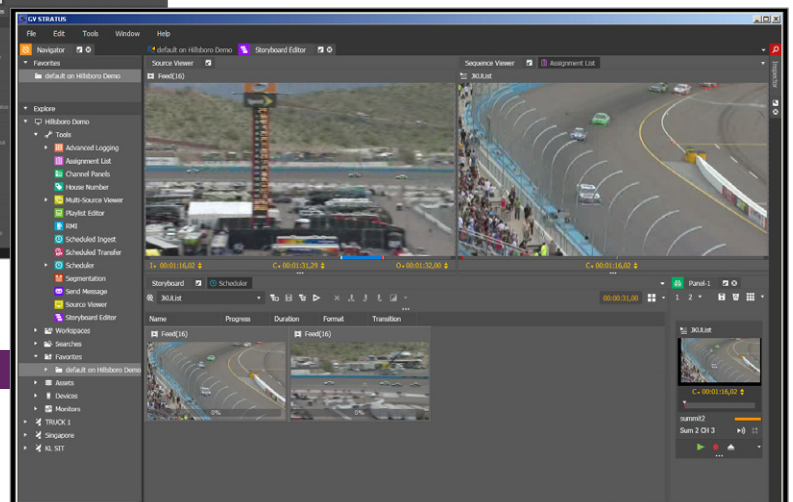
Advanced Logging Panels

- Create custom graphical panels with logos, metadata and keyboard shortcuts for logging content live or after the fact
- Compatible with USB button boxes and touchscreen LCDs
- Live logging, which allows for metadata tagging as it happens
- Create user-customizable button panels with background images, containing buttons laid out in any format/size
- Create asset segmentations while logging live or after the fact



ADVANCED LOGGING

STORYBOARD EDITOR



Assignment List

- Create placeholders for clips and coordinate with rundown stories on newsroom computer systems and with GV STRATUS Rundown
- Trigger editing workflows straight from the MOS placeholder, allowing content to be linked to the story throughout the workflow

House Number

- Populate the house number list based on requests from the Traffic system
- Link assets to house numbers from the traffic system
- Ingest Scheduler:
 - Support for numerous recording channels
 - Includes live streaming proxy from the K2 client, eliminating the need for hardware to view the input to the K2 channel
 - Includes router control for dynamic port allocation
 - Schedule ingest events up to one year in advance
 - Customizable interface, including display of selected custom fields, for fast decision making
- Scheduled Transfer Tool:
 - Automate the export of the record train, even while it is being ingested, according to a GV STRATUS-managed schedule
 - Transfer entire clips or segments
 - Target formats: MXF, GXF and MOV

Send Message

- Send and receive messages and attachments between GV STRATUS application users
- Drag-and-drop integration with email applications

Channel Panel

- Direct play/record control of a K2 Summit or K2 Solo channel with hotkeys or via a Contour Shuttle Pro
- Includes live streaming proxy for confidence monitoring
- Channel Panels can be ganged/unganged using drag-and-drop
- Dashboard Monitoring:
 - Monitor storage capacity available on K2 devices
 - Monitor quota usage
 - Monitor channel state and usage
 - Monitor system statistics
 - Monitor statistics for assets published to social media platforms

Scheduler

- Record multiple channels
- Recurring events

Removable Media Interface

- Ingest media from Panasonic P2, Sony XAVC, Sony XDCAM, Sony XDCAM EX and JVC XDCAM EX
- Merge clips on import while preserving individual markers

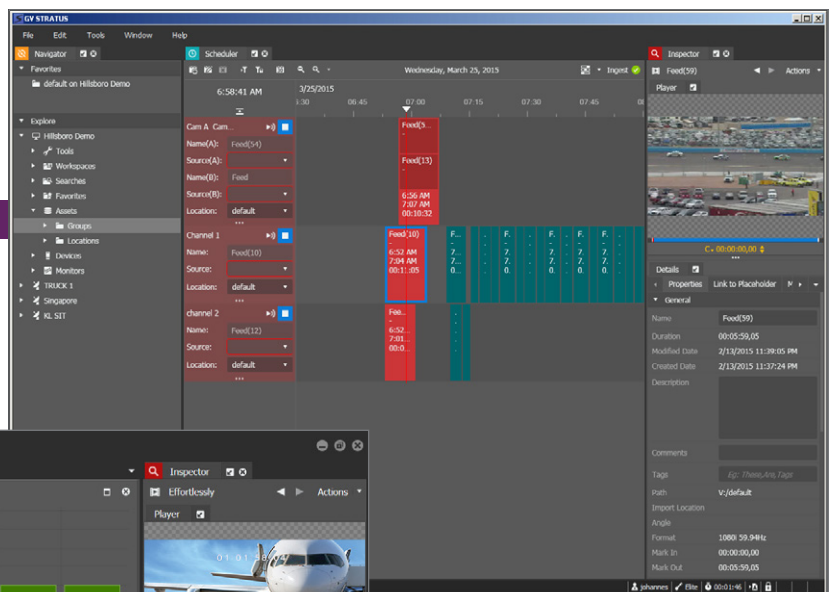
GVRE Transcoder

- Built with EDIUS codec support to allow for a wide range of codecs

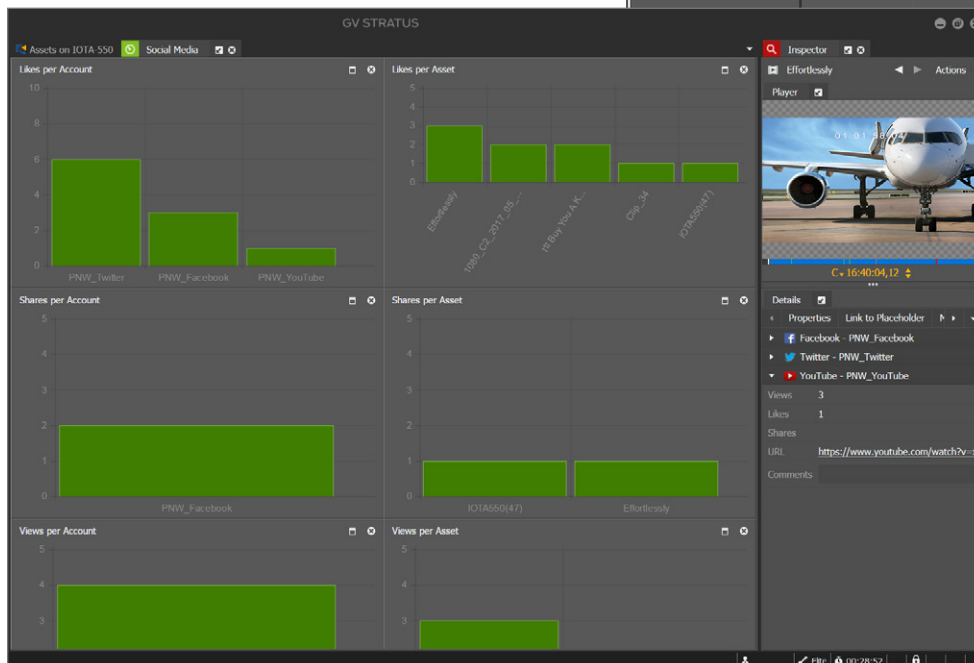
* Available in HTML5 web client

Note: Playback is limited to proxy-only with 32 channels of audio

SCHEDULER



SOCIAL MEDIA INTERFACE



SPECIFICATIONS

GV STRATUS Low-Resolution Client Workstation

Processor

Minimum: Intel Core i3 mid-range processors or equivalent and above

Memory

Minimum: 4 GB RAM

Graphics

Direct 3D 9+ support

System drive

Minimum: 1 GB of free space

Network

Single Ethernet 1000 Base-T network interface

Operating system

Microsoft Windows 7 SP1 64-bit

Microsoft Windows 10 64-bit (except for RMI seats)

Microsoft .NET Framework

Version 4.6.2

GV STRATUS High-Resolution Workstation

These requirements apply to a PC running the following:

The GV STRATUS application with a high-resolution media workflow (requires access to high-resolution assets)

The EDIUS Workgroup application with a high-resolution media workflow (requires access to high-resolution assets)

Processor

Recommended: Intel Core i7 4 Core 4 GHz (desktop-grade machines)

OR

Recommended: Intel Xeon E5-2630 Quad Core 2.4 GHz (workstation-grade machines)

Memory

Minimum: 8 GB RAM

Recommended: 16 GB RAM

Graphics

Integrated or discrete graphics with Direct 3D 9 or better

System drive

256 GB SSD drive recommended

OR

1 TB 7,200 RPM hard drive (if SSD not available)

Optical drive

Not required

Network

Dual Ethernet 1000 Base-T network interface

Operating system

Microsoft Windows 7 SP1 64-bit

Note: 64-bit required for EDIUS Workgroup

Microsoft .NET Framework

Version 4.6.2

Other support

DirectX 9 compatible

GV STRATUS Web Client

These minimum requirements apply to a device running the following:

The GV STRATUS web client

Web browser

Recommended: Google Chrome

Any HTML5 web browser should provide support

Frame accurate streaming

Browser must support webRTC

GV STRATUS system must be licensed with GV STRATUS Streaming Server

Video

NTSC, 525/59.94 (240, 248 or 256 active lines per field)

PAL, 625/50 (288 active lines per field)

HD 1080i/720p 50/60 Hz

Proxy: MPEG-4, 1 Mb/s for video and 64 kb/s for each audio track (up to 8)

Proxy Scavenge

Default settings:

Low: 512x288, H.264, 1 Mb/s (pre-version 4.x proxy quality)

Medium: 720x480, H.264, 3 Mb/s

High: 1280x720, H.264, 5 Mb/s

Custom proxy sizes are supported, from 320x280 to 1920x1080 resolution, up to 15 Mb/s

ORDERING

This section describes the modular components that comprise a GV STRATUS system. These components interact with the video server and storage infrastructure, to form combinations of solutions that best meet user-specific technical, operational and business requirements.

GV STRATUS Clients

Designed as one application capable of supporting many different usage models, a GV STRATUS client can be configured for every type of user in a media facility, whether for feed scheduling, storyboard editing, channel control, media management or playlist playout. The GV STRATUS tools function as a client to GV STRATUS Core Services, running on a standard Windows operating system computer.

If the PC is connected as an iSCSI client to the K2 SAN (or as a CIFS high-resolution client in a supported commodity-based storage system), the GV STRATUS tools and the EDIUS Workgroup editors have access to high-resolution media. This requires a high-resolution GV STRATUS license.

If the GV STRATUS client PC is not connected as an iSCSI client (or does not have a high resolution client license), such as on a distributed K2 system, the GV STRATUS tools and the EDIUS XS editors access low-resolution live streaming (across the network from the video servers) and proxy media (from the GV STRATUS Proxy server in the Core of the system).

The GV STRATUS web client connects to the Core Services and provides access to many of the same services.

GV STRATUS Servers

These servers are the primary devices that support GV STRATUS system functionality and services. They can be configured in a variety of ways to support the use case requirements of specific environments.

Variants of GV STRATUS servers include the following:

GV STRATUS Express Server — A GV STRATUS server with all the roles necessary for a basic GV STRATUS system, including the role of Proxy Express server. This server is designed for use on smaller GV STRATUS systems where no other GV STRATUS servers or proxy systems are present.

GV STRATUS Core Server — A GV STRATUS server that has the role of Core Services on a system with multiple GV STRATUS servers. The server provides media management functionality, including the GV STRATUS database and associated software components.

Proxy Server — The GV STRATUS server combined with an online or production K2 SAN that provides access to the low-resolution proxy media stored on the SAN. The server has the role of Proxy Storage server and shared file system client.

Proxy Storage File System Server — The GV STRATUS server on a dedicated Proxy Storage system that provides access to the low-resolution proxy media stored on the system. The server has the roles of Proxy Storage server and Shared File System server for the Proxy Storage system.

GV STRATUS Render Engine — A server dedicated to performing proxy encoding, conform and rendering services, to transcode complex assets, such as a GV STRATUS sequence, into a single clip. This service also renders EDIUS projects when exported or sent to playout.

Workflow Server — A GV STRATUS server dedicated to hosting the Workflow Engine service, the Rules Engine service and the Transcode Control Engine service. These services support rules-based operations.

Fault Tolerant (FT) GV STRATUS Server — An enhanced platform designed to reduce the risk of system failure in mission-critical media production environments. Fault tolerant server options are available for all the physical Core Server variants, with the exception of the Core Server Express.

GV STRATUS Storage Manager — A server dedicated to managing the storage file system database within a qualified third-party storage system. The Storage Manager is analogous to the File System Manager in a K2 SAN system. Available only as a Fault Tolerant server package.

GV STRATUS Storage Gateway — A server dedicated to managing FTP access to the storage files system within a qualified third-party storage system. Storage Gateways are analogous to the FTP (NH) server in a K2 SAN system. Available in non-redundant and Fault Tolerant server package options, multiple Storage Gateway servers can be present in a GV STRATUS system.

GV STRATUS Commodity Storage Solutions

STRAT-STOR-MGR-FT

Fault Tolerant K2 Storage Manager for third-party storage

STRAT-STOR-GWY-FT

Fault Tolerant K2 Storage Gateway for third-party storage

STRAT-STOR-GWY

K2 Storage Gateway (FTP Server) for third-party storage

STRAT-STOR-MGR-VM

Virtual K2 Storage Manager for third-party storage

STRAT-STOR-GWY-VM

Virtual K2 Storage Gateway (FTP Server) for third-party storage

GV STRATUS GVRE Transcoder

STRATUS-TRANSCODE

Software upgrade to enable XRE Transcoder features on Grass Valley Render Engine servers and integration into GV STRATUS Rules. Requires Rules and Xcode site licenses

GV STRATUS Social Media Engine

STRATUS-SMN-SME

GV STRATUS Social Media Engine license, supports 5 simultaneous uploads to licensed social platforms

STRATUS-SMN-YTUBE

GV STRATUS Social Media Engine site license, supports uploads to YouTube

STRATUS-SMN-FBOOK

GV STRATUS Social Media Engine site license, supports uploads to Facebook

STRATUS-SMN-TWITTER

GV STRATUS Social Media Engine site license, supports uploads to Twitter

GV STRATUS Virtualization

GV STRATUS server components supplied as VMWARE ESXI images to run on approved customer-furnished hardware and ESXI server infrastructure.

GV STRATUS Upgrade and Migration Packages

STRATUS-SVR-UPG1

Hardware and Windows Server 2012 upgrade for K2-SVR-100 through K2-SVR-800 Servers

STRATUS-SVR-UPG2

Hardware and Windows Server 2012 upgrade for K2-SVR-NH10GE Servers

STRATUS-SVR-UPG3

Hardware and Windows Server 2012 upgrade for STRATUS-CS-CE, STRATUS-CS-CE-ENG, STRATUS-CS-XRE and STRATUS-CS-RE Servers

STRATUS-SVR-UPG4

Hardware, Windows Server 2012 and SQL Server 2014 upgrade for STRATUS-CS-Express Core Servers

STRATUS-SVR-UPG5

Hardware, Windows Server 2012 and SQL Server 2014 upgrade for STRATUS-CS-A1, STRATUS-CS-B1 and STRATUS-CS-C1 Core Servers. Two units required for STRATUS-CS-C1 systems

STRATUS-SVR-UPG6

Hardware, Windows Server 2012 and SQL Server 2014 upgrade for STRATUS-CS-A1-FT, STRATUS-CS-B1-FT and STRATUS-CS-C1-FT Core Servers. Two units required for STRATUS-CS-C1-FT systems

STRATUS-SVR-UPG7

Physical to Virtual Upgrade for STRATUS-CS-Express systems, includes Windows Server 2012 and SQL Server 2014 upgrades

STRATUS-SVR-UPG8

Physical to Virtual Upgrade for STRATUS-CS-A1 and STRATUS-CS-A1-FT systems, includes Windows Server 2012 and SQL Server 2014 upgrades

STRATUS-SVR-UPG9

Physical to Virtual Upgrade for STRATUS-CS-B1 and STRATUS-CS-B1-FT systems include Windows Server 2012 and SQL Server 2014 upgrades

STRATUS-SVR-UPG10

Physical to Virtual Upgrade for STRATUS-CS-C1-FT systems, includes Windows Server 2012 and SQL Server 2014 upgrades

STRATUS-SVR-UPG11

Physical to Virtual Upgrade for STRATUS-CS-CE, STRATUS-CS-CE-ENG, STRATUS-CS-XRE and STRATUS-CS-RE Servers, includes Windows Server 2012

STRATUS-SVR-UPG12

Physical to Virtual Upgrade for STRATUS Proxy servers in A1, B1, C1 systems

Partners and Integrators

GV STRATUS was conceived to facilitate agile integration of new capabilities and tools, and to attract a broad array of technology providers, business partners and system integrators.

With GV STRATUS, Grass Valley can efficiently and regularly add new software components to preserve system investment and help users upgrade to the most advanced content creation tools quickly and easily. However, the inherent extensibility of the GV STRATUS platform is not limited to integrating Grass Valley's own solutions. The GV STRATUS framework is adaptable to provide a consistent service-oriented model for both internal and third-party software modules, and for rapid integration with best-of-breed technologies.

When needed, Grass Valley can integrate third-party applications and integrate them into user- and segment-specific solutions, while enabling cost-effective implementation, deployment and support in the field.

Third-Party Technology Partners

As media companies transition to new technologies and accommodate best-of-breed technologies from a diverse pool of suppliers, the agility of the GV STRATUS platforms helps them to efficiently evolve their media networks in an economical manner.

Grass Valley partners with many of the industry's significant technology providers, to integrate with systems such as traffic, asset management, editing and archive. GV STRATUS currently interfaces with a number of other production systems as well.

Editing System Integration

While Grass Valley EDIUS is the best choice for both proxy editing (including voiceovers) and high-resolution editing, Apple Final Cut Pro 7, Avid Media Composer and NewsCutter, and Adobe Premiere Pro CC can also be integrated

for the same type of high-resolution craft editing. All of these editors can be integrated either by performing file transfers of both content and metadata, or edit-in-place when using the GV STRATUS plug-in.

Archive HSM Integration

Archive interfaces make content repurposing easy and practical. The GV STRATUS framework interfaces with SGL Flashnet, Oracle, Masstech and generic FTP storage.

Newsroom Computer Systems (NRCS)

A series of archive, conform and metadata management enhancements in GV STRATUS addresses the unique production needs of the newsroom. This functionality, when combined with AP ENPS, Ross Inception, Octopus, Avid iNEWS, Annova OpenMedia or other newsroom computer systems, permits users to access all of their GV STRATUS tools within the NRCS — streamlining the entire news production process. These new tools also facilitate the unlimited sharing of clips and content creation tools between collaborative workgroups or individual users.

Digital Media Platforms

Grass Valley's Ignite automated production system is tightly integrated with GV STRATUS to streamline publishing to digital media platforms. Under GV STRATUS control, users can add metadata, segment assets and SCTE markers so that they are automatically prepared for VOD and live streaming content replacement for advertising, embargoed material and regional variations. GV STRATUS currently interfaces with downstream SDI live streaming engines from Verizon.

GV STRATUS can natively export H.264 files and closed captioning files to web platforms without the need to transcode. However, should different formats be required, GV STRATUS can be integrated with leading third-party transcoders, including Harmonic ProMedia, Elemental AWS Live and Telestream Vantage systems.

High-Speed File Transfer Solutions

GV STRATUS provides the ability to export/import material in an automated fashion across global distances, with speeds far exceeding conventional TCP-based technologies. Grass Valley's collaboration with Aspera, an IBM company, and the integration of their Fast Adaptive and Secure Protocol (FASP) transport technology into GV STRATUS workflows, makes it possible to carry out collaborative media production on a truly global basis.

Solution Partners and Integrators

By offering software APIs, the GV STRATUS framework attracts a rich ecosystem of integration partners and third-party application and solution developers.

A powerful web service API (RESTful web API) is available for third-parties to implement specific integration requirements or to develop innovative production tools. To implement these types of projects, Grass Valley executes licensing and support agreements with selected technology and business partners and with system integrators.

GV STRATUS Services – Defining, Deploying and Supporting Solutions for Nonlinear Production Tools

The performance of a broadcast enterprise can't be impacted by any interruptions, including technological glitches, workflow inefficiencies or mistakes caused by insufficient training.

That's why Grass Valley Global Services offers a full spectrum of Professional Services, Training and comprehensive Customer Support, which ensures successful ownership and operation of Grass Valley solutions. With advanced architectural services, proven methodologies, preventative support and priority response, your operations are optimized and maximized, so broadcast environments run leaner, smoother and more aligned with business priorities.

Professional Services

Define, design and deploy solutions that meet business goals. When partnering with Grass Valley Professional Services, a team of experts is part of the interaction. From initial concept and architecture definition, to implementation and management, they will help you realize solutions that address the unique processes, workflows and infrastructure requirements necessary to meet your specific business objectives.

- Enhance the quantity and quality of organizational resources. Meet and exceed end-to-end project requirements that ensure getting it right the first time.
- Ensure productive workflows and operational efficiencies are in place and designs maximize available budget. Gain increased productivity leading to a measurable quicker return on investment.
- Migrate workflows off legacy systems to new architectures. Enjoy the advantages of new technologies.
- Move swiftly from purchase to production. Accelerate the steps from build — to integrate — to operate.

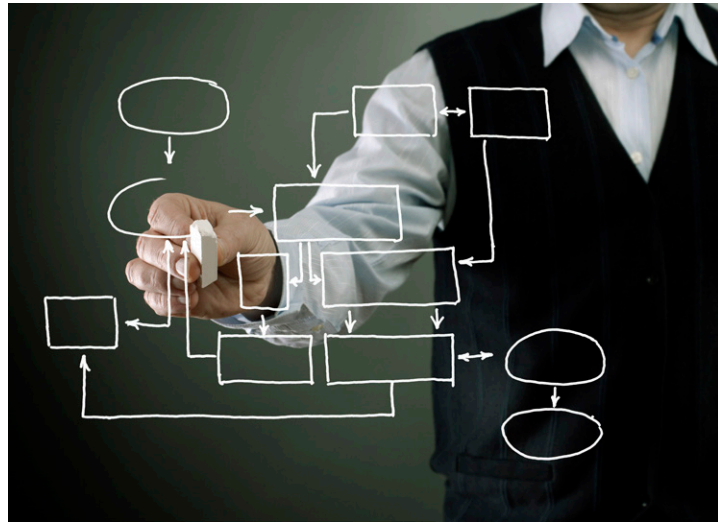
Training

Get maximum value from Grass Valley solutions. With on-site, online, factory-based and customized education, your organization gains the knowledge and skills to meet its operational and technical support needs. Expert-led courses are designed for operators and maintenance engineers, with a combination of theoretical learning and hands-on exercises.

Support Agreements

Get ahead of the game and take proactive steps to support all operational aspects. With Grass Valley Customer Support, investments are protected, uptime requirements are met and system performance is maintained and enhanced. Elite, Basic and Custom Agreements are straightforward and easy-to-understand.

The Elite Support Agreement is designed for critical environments where uptime is demanded and rapid problem resolution is a must. This agreement provides 24x7 technical phone support, call center prioritization, service level commitments, defined fault resolution processes, free software updates and upgrades and advance parts exchange. With an Elite Support Agreement, media production environments achieve both operational efficiency and financial predictability.



GLOBAL SERVICES PROVIDES:

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- Over 50 years of worldwide experience
- Complete set of services:
 - Strategic advice
 - System architecture
 - Workflow analysis and design
 - Project management
 - Integration and implementation
 - Performance optimization
 - Technical and operational training
 - Educational services
- Address today's challenges and prepare for tomorrow's opportunities



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