

# VBC Server

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# VBC SERVER

## VBC SERVER & ELEMENT MANAGER

The VBC offers central management and status displays of all monitored services, providing a window into the performance of television distribution operations. The VBC gives unprecedented insight into network health and the flow of all types of media streams throughout the network, and is a server-side software application that allows multiple Bridge Technologies monitoring probes to be accessed from a single, web-based user interface.

Key elements in the VBC include: configuration management and stream performance comparison at multiple points, worst-performer identification, drill-down analysis, stream and service status monitoring, graphical alarm historical data-display with the Microtimeline™ technology, Visio™ map import with active alarm indication, trend graphing up to two years, SNMP multi-destination trap forwarding, alarm logging SLA report generation and aggregated alarm trend graphs. The VBC also has a built in MAP view, allowing the user to geotag probe locations.

RDW (Remote Data Wall) is a display technology controlled by the VBC, allowing you to create live data dashboards of network activity, enabling potential problems to be rapidly identified and appropriate corrective action taken.

The VBC server runs in a Linux Ubuntu-based environment that can be installed on standard server hardware, or in a cloud environment. The VBC client is simply a web browser pointed towards the VBC server, and can run on any client operating system.

When managing a large digital television system often consisting of hundreds of monitoring nodes there is a need to be able to aggregate information and monitor the overall system status from a central location, as well as offering features such as user login with access restrictions.

Deploying the VBC Controller as part of the system enables the user to view the system status at-a-glance and the VBC's drill-down functionality makes it easy to locate the problem source and examine details on the devices themselves. Through the VBC the user can perform tasks such as building a hierarchical equipment view, view aggregate alarm and status messages, get aggregate status per TV stream and compare measurements across devices. The VBC supports alarm export for integration into an NMS system.

## Sites, Users and Nodes

The Bridge probes offered in the VBC are VB120, VB220, VB330, VB440, NOMAD, MDC and QTT Manager.

The VBC is structured around the concept of Sites, Users and Nodes. A Site is often a geographical location (Paris) or a logical network demarcation structure (Head-End-Ingest). A User is a user role defined by the admin user and could be anything. Users are given access to Sites. In this manner it is possible to deploy a single VBC instance and have multiple commercially independent entities accessing the same system. Nodes – or probes – are the physical monitoring points in the network and are organized underneath Sites.

The VBC server may be accessed by several users simultaneously. An administrator manages users and their access rights, and a user can only view information concerning sites that he has access rights to. A user with read-only access can only view alarms whereas a user with read/write access can alter equipment settings at the sites he has access to.

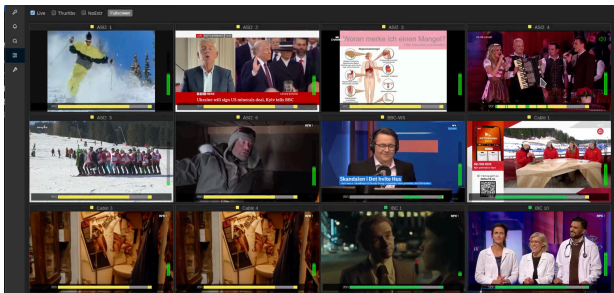
VBC Controller				VBC Controller				
	Last9h	Now	I.F. Stream	#	Last9h	Now	I.F. Stream	
LOGIN								
LIVE								
MONITORING								
BLADE ALARMS								
GRAPHICS VIEW								
STREAM VIEW								
SELECTED								
THEMES VIEW								
SERVICE VIEW								
MAP								
RDP								
RDW								
EQUIPMENT								
REPORTS								
EXT. REPORTS								
MAIN								
1			COF... 198.12	1			IPTV 48_KS_13	1
2			QAM 264 Mhz	1			COF... 556_DVB-T	1
3			QAM 268 Mhz	1			IPTV Al Jazeera English HD	1
4			QAM 305	1			Asooat-Deluxe-DASH	1
5			QAM 306 Mhz	1			Asooat-Deluxe-HLS	1
6			QAM 314 Mhz	1			Asooat-NRK 2 sec	1
7			QAM 322 Mhz	1			Asooat-NRK 2 sec-HLS	1
8			QAM 330 Mhz	1			Asooat-NRK DASH	1
9			QAM 338 Mhz	1			Asooat-NRK1 CDN-HLS	1
10			QAM 345 Mhz	1			Asooat-NRK1 CMAC	1
11			QAM 354 Mhz	1			Asooat-NRK1 SS	1
12			QAM 362 Mhz	1			IPTV info HD	1
13			QAM 378 Mhz	1			ASI2_1	1
14			QAM 410 Mhz	1			ASI2_2	1
15			QAM 428 Mhz	1			ASI2_3	1
16			QAM 434 Mhz (dun)	1			ASI2_3 - ASI-T2M	1
17			QAM 434 Mhz (dun/2/1)	1			ASI2_4	1
18			QAM 434 Mhz (dun/2/2)	1			ASI2_5	1
19			45MbaMUX_10	1			ASI2_6	1
20			45MbaMUX_11	1			SAT Adria German	1
21			45MbaMUX_12	1			OTT ATV TV2 DASH	1
22			45MbaMUX_13	1			IPTV BBC World News Europe HD	1
23			45MbaMUX_14	1			Bloomberg	1
24			45MbaMUX_15	1			IPTV Cam	1
25			45MbaMUX_16	1			OTT Cam_Dash	1
26			45MbaMUX_17	1			IPTV Camera3	1
27			45MbaMUX_18	1			IPTV CartoonNetwork	1
28			45MbaMUX_19	1			IPTV Channel21	1
29			45MbaMUX_9	1			IPTV CBS	1
30			45MbaMUX_1	1			IPTV Comedy Central Austria	1
31			45MbaMUX_2	1			IPTV Das Erste HD	1
32			45MbaMUX_3	1			IPTV ddadest_1	1
33			45MbaMUX_4	1			IPTV ddadest_10	1
34			45MbaMUX_5	1			IPTV ddadest_11	1
35			45MbaMUX_6	1			IPTV ddadest_12	1
36			45MbaMUX_7	1			IPTV ddadest_13	1
37			45MbaMUX_8	1			IPTV ddadest_14	1

## Stream View

The Stream View in the VBC is one of the most powerful and versatile dashboards available to the operator. It offers a per-stream alarm status view over the last 96-hours for all the streams monitored by all the probes seen by the VBC using the patented microTimeline™ technology. A Stream is a media stream carrying audio and video and can be an IPTV multicast, an OTT ABR stream or an RF Transport Stream. The user can drill down into each stream if alarms are shown for further details and eventually reach the detailed user-interface of the individual probes measuring on the stream in question. Inside Stream View it is possible to sort on alarm severity, stream type and custom defined stream groups. A stream group is just a collection of streams that the operator has defined and could be used to distinguish premium channels from other channels, as an example.

## Thumbs View

The VBC contains a thumbnail view panel that presents all the available thumbnails extracted from all the probes presented together with a matching microTimeline™. The alarm state of each stream is indicated via a colored frame around the thumbnail. The thumbnail view allows sorting on alarm severity and filtering on stream group or individual stream name.



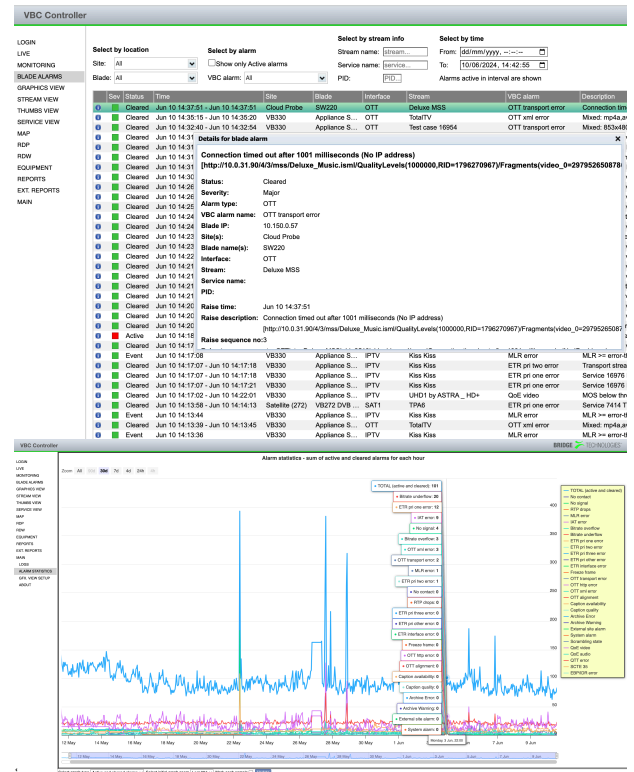
## VBC Live - Turning Monitoring into a Video Mosaic

The VBC Live feature transforms the VBC controller into a fully customisable video mosaic. Operators can configure their own layouts, streaming multiple live feeds simultaneously – each overlaid with real-time alarm indicators. This isn't just a nice-to-have visual; it's a vital operational tool. By seeing the health of all key streams at once, with immediate visual cues about any issues, engineers can rapidly identify where the flood is coming from and take swift action. Designed to handle multicast and SRT streams alike, VBC Live fits smoothly into modern IP and hybrid broadcast environments. It's a powerful example of how combining rich visual monitoring with deep data correlation can help broadcast teams perform best practice.

## Alarming and alarm statistics

The VBC offers alarm filtering and integration to avoid alarm flooding and false positives. A Live

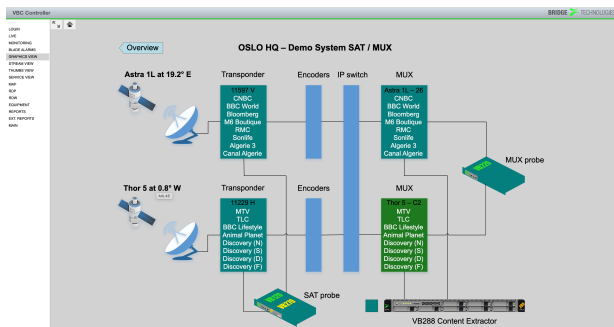
alarm view shows the currently active alarms on all sites monitored by VBC. A powerful alarm trending graph available on a per-user basis offers statistics over up to 2 years back in time. For the ultimate in alarm resolution, it is possible to also access and search in the instant alarms from the individual probes via the Blade Alarms view. Filtered alarms can be further forwarded to 3rd party NMS style systems via a configurable SNMP Trap interface.



## Software and Configuration Management

The VBC offers an Equipment dialogue that allows the operator to gain a centralized overview of systems related information such as product types, hardware versions, serial numbers, software versions, license keys, license maintenance expiry dates, probe uptimes, temperature, CPU usage, RAM usage, disk usage. The Equipment dialogue offers a centralized method of performing bulk software updates towards the probes being managed. It also allows configuration files to be replicated from one probe onto others, saving time during system setup and change.

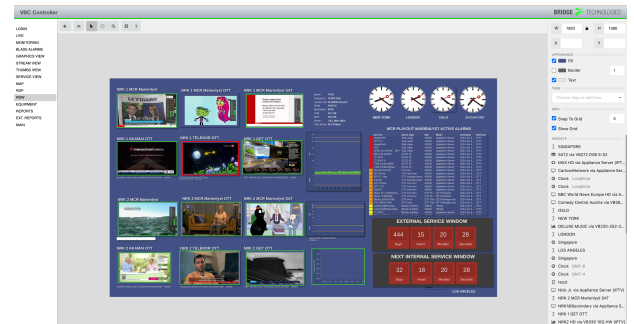




charts, network diagrams or geographical map locations. The graphics view systems diagrams can be configured to be shown in a carousel manner to the operator to cycle through as much relevant information as possible. Each graphics diagram is recursive in nature, where the user can click on an object in one drawing and drill into another. Links can be made to tunnel straight into monitoring probes from the top-level graphical view.

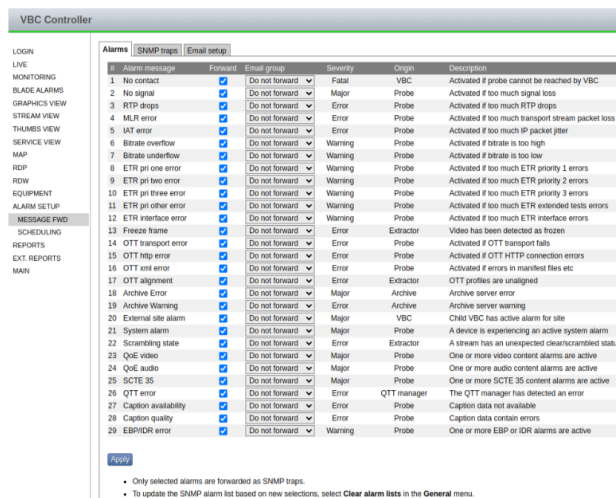
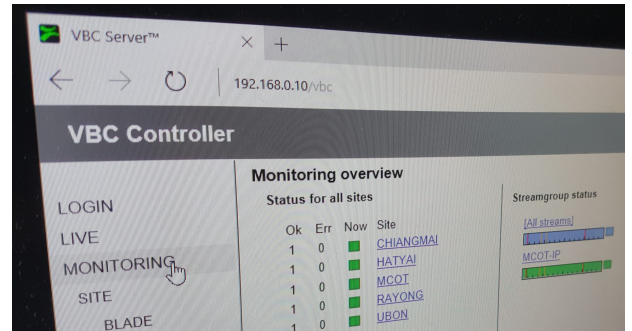
## Remote Data Wall (RDW)

Remote Data Wall (RDW) gives the operator the capability of having multiple autonomous browser-based viewing stations accessing customized data panels in a distributed manner. The operator builds the data panel dashboards, and these are then made accessible from any browser instance. Typical data primitives making up a dashboard include alarm lists, thumbnail views, graphical Visio elements, RF signal graphs, constellation diagrams, redundancy switch status, wall clock, countdown to event, audio loudness graphs, VBC stream view, VBC graphics view, OTT status, maps, as well as many others. The client browsers are pointed towards the VBC and can then be remotely controlled and refreshed. Applications include headless data visualization in network operations centers, or in distributed work environments.



## Redundancy

A second VBC instance called VBC-R is offered at a heavily discounted rate for those systems in need of 1+1 style redundancy, either on-prem or in cloud environments. Two VBC instances are then run side by side, accessing the same underlying probe units. Using the DNS setup to point to either one or the other instance it becomes possible to have a transparent and powerful redundancy scheme in place. This has advantages in terms of achieving a high up time as well as catering for a stepped systems maintenance process with minimal to no system downtime.

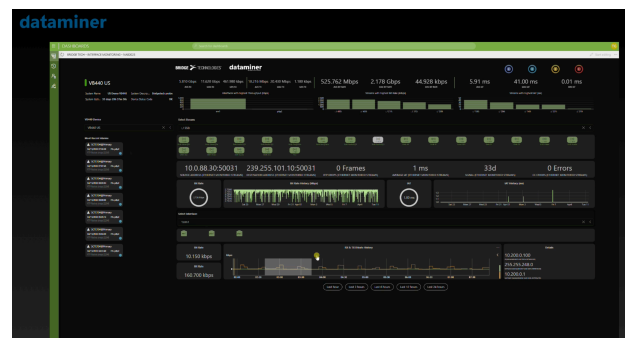


## Integration interface

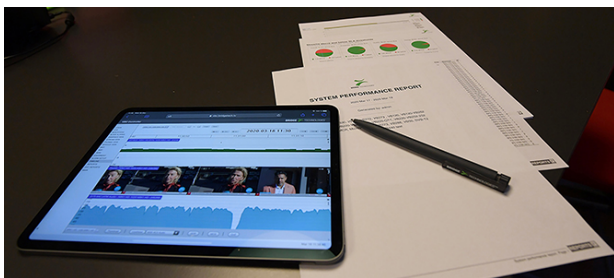
The VBC offers a set of northbound integration interfaces. These include SNMP TRAP forwarding of filtered VBC alarms to a third-party overlying NMS system. Up to 4 different TRAP destinations can be configured. It is also possible to configure e-mail groups to receive VBC alarms with a user-selected batch processing time. SLA reports generated by the VBC can also be forwarded automatically as e-mail attachments.

## Skyline Communications - Dataminer

We give you data, your way. Whether it be through the entirely customisable Remote Data Wall or through partnership with other network control providers, one brilliant example being Skyline Communications' DataMiner, we allow you the

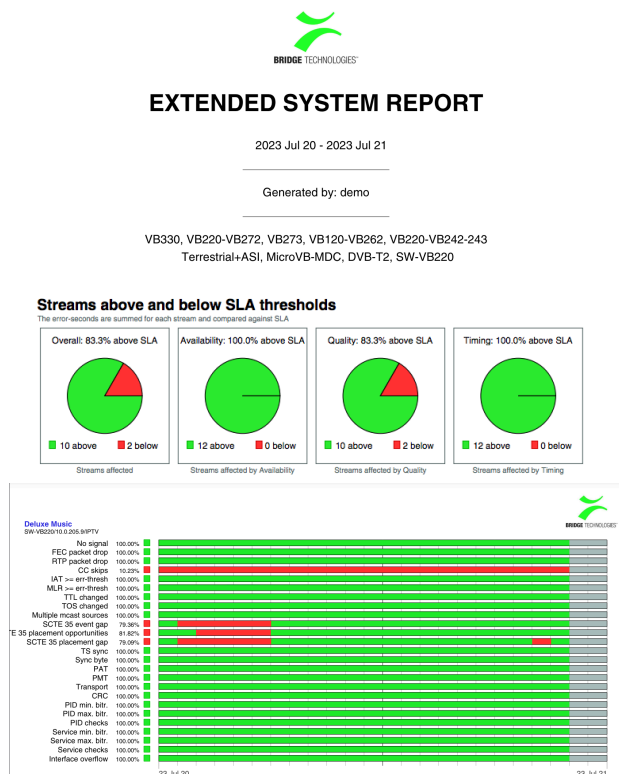


flexibility to access data that matters to you, in a way that is meaningful and accessible to you. Bridge Technologies works closely with the technical team at Skyline Communications, ensuring drivers for probes are kept optimized and up to date.



## Reporting / Extended Reporting

The Reporting feature of the VBC makes it possible to generate SLA-style reports that are built up either manually or automatically at specific points in time. Each report can span anything from a day and up to 2 years. For multicast-type streams the streams are scored in terms of Availability, Quality and Timing with calculated percentages for each. In this manner, an SLA can be put in place and reported against. The Extended Reporting feature of the VBC takes this to the next step to include SLA percentage measurements for all types of streams and alarms – not only those for IP multicast. Reports can be configured to be automatically emailed to a distribution list once complete.



## Security — Tacacs+

Bridge Technologies uses best practices from the IT industry to ensure continued operational stability and the highest level of protection against attack. The VBC ensures continued operational stability using HTTPS to secure and encrypt the communications channels, thus practically

eliminating the possibility of man-in-the-middle attacks. This provides broadcast facilities with the ability to architect and use IP broadcast capabilities with confidence and ease.

## Technical specifications

### VBC SERVER

#### VBC SERVER & ELEMENT MANAGER FEATURES

- HTTP/HTTPS web-based client access on any platform
- Configurable access control / support for different user roles
- Password protected login for web browser clients
- Framework for organizing probes into sites
- Group TV channels into stream groups for easy problem identification
- Highly scalable system allowing up to 500 monitoring probes through licensing
- Higher probe node count possible through hierarchical VBC design
- Easy integration and data export for 3rd party NMS systems through XML and SNMP traps
- Central element management of all monitoring probes in the network through HTTP/HTTPS
- Configuration file copy/paste functionality between probes
- Perform centralized bulk software upgrades
- Copy/Paste parts of configuration files between probes from central equipment view
- Central alarm aggregation of all monitoring probes in the network
- Alarm aggregation on a per-site and per-channel scope
- Trend graphs over multiple days of OTT, IPTV and RF parameters
- Graphical timeline view for several days for comparison between sites
- Graphical Transport Stream aggregated alarm view for several days
- Alarm logging with readout as HTML or XML
- Thumbnail and meta data view
- Alarm Scheduling capabilities to filter alarms during specific times during week
- Alarm filtering for avoiding alarm floods
- Define turn-on time and turn-off time to limit alarm floods
- Define window of time over which alarms are disabled
- General system health status panel

- MICROTIMELINE™ view of last 96 hours of operation for individual streams and configurable stream groups
- MICROTIMELINE™ stream view allowing easy identification of worst-performers
- Thumbnail and meta data view
- Hierarchical equipment view with bulk edit functionality
- Framework for centrally controlling the Return Data Path video relay functionality in probes
- Support for adding QTT Manager for active and continuous OTT monitoring
- Linux-based server platform for stable on-prem or cloud deployments

## REPORTS and EXTENDED REPORTS FEATURES

### FUNCTIONALITY

- Comparison of measurements with SLA agreements
- Automatic SLA trend reporting in PDF format for IP multicasts monitored
- Automatic SLA trend reporting in PDF format summarizing TR 101 290 analysis results for all transport streams monitored
- Automatic SLA trend reporting in PDF format for OTT/ABR streams monitored
- Report time period selectable from 1 day to 2 years
- Selection of sites and streams to be included in report
- Upload your own logos to personalize report
- Automatically set up regular email distribution of reports at predefined points in time

*REPORTS and EXT REPORTS are now included as standard in the VBC*

## TRANSPORT STREAM SERVICE VIEW

### FUNCTIONALITY

- View alarm state of all services inside transport streams based information in PSI/SI
- 4-day microTimeline™ alarm view of all services monitored

*TSSV-OPT is now included as standard in the VBC*

## GRAPHICS VIEW

### FUNCTIONALITY

- Active system maps with alarm highlighting based on VISIO™ import
- Alarm indication for individual graphic icons
- Logical system diagram showing signal flow
- TV channel signal flow diagram with issue highlighting

*GRFX-OPT is now included as standard in the VBC*

## REMOTE DATA WALL (RDW)

### FUNCTIONALITY

- Rich graphical data wall display from diverse sources of data
- Screen based configuration paradigm, multiple TVs or computer screens
- HTML5 based, no special hardware required
- Multi-Browser linking
- Adaptable notification modes
- Easy and elegant control plane application

**Widgets included:** Web (iframe), Textbox, Thumbnails (with audio bars), Loudness (freestanding audio bars and graphs), MediaWindow™, VBC Alarms, RF Graphs, Clock, Slideshow, Countdown, GraphicsView, Stream View, Weather, Redundancy, Switch status, MicroTimeline™, MircroETR™, OTT Graph  
OTT Status overview, RF Constellation graph, RF Data and Map

## ORDERING CODES

### VBC-SERVER WITH REPORTS

**VBC-BASE-5** – VBC base software supporting up to 5 probes. Includes reporting, graphics panels and transport stream service view. Includes live video mosaic for up to 5 streams given sufficient server resources. Server hardware not included.

## VBC OPTIONS

**VBC-ADD1** – Adds 1 probe to base system

**VBC-ADD5** – Adds 5 probe to base system

**RDW-OPT** – Remote Data Wall with data widgets for custom dashboards

**VBC-LIVE-OPT** – Live video mosaic in browser with audio bars and click-through. Number of concurrent live video transcodes is limited only by the VBC server performance. Initial version supports 20x H.264 1080p 25Hz within one suitably scaled server. Scaling is possible beyond the 20 streams in future upgrades by deploying parallel transcode servers controlled by the VBC server

**VB-SW1-SW** – 1 Year Software Maintenance with Access to ALL new versions of Software

**VB-SW3-SW** – 3 Year Software Maintenance with Access to ALL new versions of Software

**VB-SW5-SW** – 5 Year Software Maintenance with Access to ALL new versions of Software

*REPORTS, TSSV-OPT and GRFX-OPT are now included as standard in the VBC*

## DOCUMENTATION

### MANUALS

VBC User Manual – [DOWNLOAD](#)

Click below to learn more about compatible technology options:

[Eii™](#)

[MediaWindow™](#)

### Environmental

[Euroenvironment](#)

[RoHS](#)

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