

Remote Production 2.0

Produce more with less

Remote production is the answer to produce more content with less resources. Correctly implemented, remote production can reduce the movement of people and equipment, increase utilization, reduce on-site set-up times and maximize the efficiency of production teams.

Broadcasters are receiving pressure to produce more content with less resources. If done correctly, remote production is the perfect solution to ensure high-quality content while enabling the production of more content each day. As studios move to IP, the focus goes beyond changes in cabling. Increasing efficiency by moving to remote and distributed production will be key. This can now be easily managed and orchestrated over the growing infrastructure of WAN for broadcast applications. Net Insight's equipment has enabled ten thousands of remote productions to date enabling its customers to produce more content with less. Remote Production 2.0 takes remote production beyond by offering better workflows and easier deployments for any kind of production.

Enabling the Remote Production 2.0 ecosystem

The multi-service Nimbra platform offers all relevant features for remote production, such as support of both SDI and IP video transport, sync transport over the WAN, best in class low latency compression, built-in frame synchronizers for camera feed playout aligned to the house clock. Despite other solutions the outstanding Nimbra transport capabilities guarantee 100% link capacity usage while enabling full service separation end-to-end over any underlying network infrastructure. Nimbra's resilient form-factor that has been used in the most challenging environments and provides telecom-grade high performance products.

Best picture quality with low bandwidth requirements

High-quality JPEG2000 compression of live video lets broadcasters and media services providers lower their networking costs while still delivering quality customers want to pay for. Nimbra enables visually lossless video quality using 4:2:2 10-bit JPEG2000 compression with up to 90% reduced bit rate compared to uncompressed video. That allows up to 12 live camera streams being transported over one 1 Gb/s link. The very low compression delay of 1-1,5 frames makes Nimbra the natural choice for all high-quality

Nimbra Remote Production



Modular and compact all-in-one Nimbra platform for world-leading remote productions.

remote productions. Nimbra VA series enable the transport of H.264/H265 video over unmanaged networks for low cost and backup solutions.

Grass Valley DirectIP+ transport

The integrated DirectIP+ solution enables highly efficient remote production by leaving Camera Control Units (CCUs) at-home. The standard based SMPTE 2022-6 Grass Valley camera raw feeds are compressed with the Nimbra platform reducing the bandwidth requirements by 90% and enable end-to-end interstream synchronization with audio, video and data across the platform. This between Grass Valley, Embrionix and Net Insight jointly developed solution allows light-weight minimum equipment deployment with smallest remote production racks and makes as the first of its kind over WAN possible to reuse base stations (CCUs) in central production hubs.

Calrec RP1 transport with outstanding jitter enhancement

Today audio remote production struggles huge delays on the signal path, creating echoes and challenges for synchronization. Moving the audio processing to the venue side with Calrec's RP1 erases on site delays and enables high-quality production workflows. Nimbra is the only platform with jitter enhancement for wide area networks, that enables lowest delays while keeping up all synchronization for audio, like phase and frequency aligned PTP transport over any underlying WAN infrastructure.

KEY FEATURES

90% savings of bandwidth

ISO/IEC 15444-1 JPEG2000 (4:2:2 10-bit) encoding/decoding of full frames for best image quality. Support for compression of SD-SDI, 3G-SDI, HD-SDI and UHD with lowest encoding/decoding latency is a perfect fit for any remote production.

100% link capacity usage

Service-aware provisioning with guaranteed dedicated bandwidth for video, audio and data services for the at-home production enable end-to-end resource allocation and avoid overprovisioning. Traffic shaping and admission control at ingress protect the overall QoS. Nimbra enables 100% usage of the link capacity with end-to-end service separation.

Multi-service platform - All in one box

On top of this remote video, audio, camera control, tally, sync and general IT all have different characteristics requirements and demand proper service isolation all the way from the event site to the broadcast facility.

Mission critical remote platform

Nimbra has a large palette of availability functions, from fast service re-routing to service specific redundancy. Hitless 1+1 enables protection for any streaming service against both intermediary loss (burst and random packet loss) as well as complete connection failures. Together with its integrated forward error correction the Nimbra setup is bullet-proof, also in unreliable remote environments.

All-IP enhanced access with Embrionix SFPs

Closely developed with Embrionix, the fully modular Nimbra access platform supports all common SDI and IP-video standards, like HD, 3G, UHD, SMPTE 2022-6 and SMPTE 2110.

Real-time control and service monitoring

In-depth network performance monitoring with integrated link utilization monitoring. Signal routing with automated provisioning from remote venues to the production hub. Integrated fault management, rerouting,

PRODUCT SPECIFICATIONS

TRANSPORT

Nimbra 600 series Media Acceleration Module (16 x J2K encoding/board; up to 90 streams)
Media Access Module (8x 1Gb/s/board, AES-67, data, auxiliary, control)
Audio Access Module (AES/EBU, MADI)
Nimbra Trunk Module (1-100Gb/s, IP/MPLS, DWDM)

JPEG2000:

Standard ISO/IEC 15444-1

Formats: SD-SDI: 25 – 200 Mbps
HD-SDI: 75 – 200 Mbps
3G-SDI: 100 – 400 Mbps

Monitoring: Performance monitoring for transport and down to service level

Protection: Forward Error Correction
Nimbra Hitless 1+1 protection

Frame Alignment: To external sync reference or node clock

Sync Input: 3G/HD/SD-SDI, analogue bi- and tri-level, PTP transparent transport

Management: SNMP (v1/v2c/v3), Web GUI, Nimbra Vision

Nimbra VA series Up to 4x H.264/H.265 encoding and decoding

Network: Internet Transport: Advanced Error Protected Transport (UDP/IP), Bonding, Adaptive Link Protection

Protection: Ingress & Egress Handoff: TSolP (UDP/IP) Unicast & Multicast with optional FEC (SMPTE 2022-1)
Security: Embedded Firewall, Remote VPN capabilities, Video Encryption

VIDEO

Direct IP+ option Grass Valley X86 camera with DirectIP option
SMPTE 2022-6 HD encoding with JPEG 2000

AUDIO

Calrec RP1 option Calrec RP1
AES-67 & MADI transparent transport over Nimbra ETS

INTERCOM

Riedel Bolero AES-67 transparent transport

ACCESS

Embrionix SMPTE 2022-6 SFP+ modules

SOLUTION PARTNERS



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