SIMPLIFY IP ROUTING & ORCHESTRATION

Live IP flow routing for next generation broadcast facilities
IP ROUTING AND ORCHESTRATION

EVS SCORE MASTER is a next generation routing system for live media production in an IP world.

IP is a powerful enabler for live media operations. In order to fully leverage the potential of IP, it is necessary to benefit from a layer of orchestration.

SCORE MASTER interacts with the nodes connected to the network in order to dynamically expose their capabilities. It uses SDN methods to control the IP Fabric and guarantee execution of the flows.

MAIN FEATURES

- Flow admission control
- Open switch APIs (Cisco DCNM, Arista, Openflow)
- Single Spine, Spine & Leaf, Distributed
- Flow agnostic (SMPTE 2110, SMPTE 2022-6, AES67, and more)
- Support for SMPTE 2022-7 hitless merge
- Endpoint management (NMOS and proprietary APIs)
- Real-time flow analysis via SCORE EDGE
- Clean-switching & Flow NATing as a service via SCORE EDGE
- Configuration and monitoring from a single web application
An IP Fabric is not media-aware, it essentially knows only about IP packets. On the other hand, live media operations require ‘sources’, ‘destinations’ and predictable system behavior.

SCORE MASTER hides the complexity of nodes and network management and provides simple and intuitive web interfaces to enable guaranteed deterministic live media productions.

SCORE NODE MANAGEMENT
MASTER maintains an inventory of the nodes connected to the network (replay servers, mixers, encoders, decoders, multiviewers, etc). Vendor agnostic, SCORE MASTER follows industry specifications like NMOS to control the nodes as well as vendor specific API’s when it is required. It provides a single point of interface for IP configuration of the nodes.

SDN PER-FLOW CONTROL
SCORE MASTER tightly controls the IP Fabric. It uses per-flow routing: each flow is specifically routed on request with deterministic network path, bandwidth awareness and a level of priority. It provides a very tight control on the network infrastructure and drastically enhances the reliability and efficiency of the network fabric. SCORE MASTER supports multiple network sizes and topologies. With control of the endpoints and control of the IP Fabric, SCORE MASTER removes the complexity inherent to IP and provides an uncluttered interface for routing and monitoring of flows.

FAMILIAR SYSTEM MONITORING
SCORE MASTER makes sure the IP network doesn’t feel like a foreign domain for broadcast engineers and makes it easy to monitor the infrastructure. With visual patching and probing of flows, monitoring in between the fabric and endpoints becomes easy. SCORE MASTER puts you in control by providing an easy overview of the network state.

DO MORE WITH SCORE EDGE
Add on to SCORE MASTER, SCORE EDGE is a pure software implementation offering IP-to-IP processing as-a-service.

SCORE EDGE offers instant flow monitoring with its one click probing, as well as Network Address Translation (NAT) and clean-switch of flows.
TIGHT CONTROL OF THE NETWORK

No flows are admitted on the network without SCORE MASTER having specifically authorized it. SCORE MASTER also determines the best network path and keep track of the bandwidth of the flow. It provides an exhaustive real-time view of the traffic on an IP Fabric.

SCORE MASTER manages the level of priority of each flow individually. Assigning priority levels to individual flows can be used in a variety of ways. By default, all streams have the same level of priority.

SCORE MASTER supports multiple switch APIs and topologies:
- Cisco DCNM
- Arista native API
- OpenFlow

ADMISSION CONTROL

While, normally, the IP Fabric is designed in order to satisfy any connection request from operations, it may happen that, because of a network failure, or a wrongly configured node, the IP Fabric does not have sufficient bandwidth to satisfy a request.

As SCORE MASTER knows about all activity on the network, it can tell whether there is sufficient bandwidth available to establish a new connection. If there isn’t, SCORE MASTER denies the new connection and issues an alarm.
INTEGRATION WITH ROUTER CONTROL SYSTEMS
It is possible to control a SCORE MASTER instance from a 3rd party control system. Control can be performed by:

/ Ember+ (Integration with LAWO VSM Broadcast Control & Monitoring System)
/ SCORE MASTER Native HTTP API

MANAGEMENT OF THE NODES
SCORE MASTER makes configuration easy by using NMOS and other vendor-specific APIs in order to identify and configure the nodes connected to the IP Fabric.
SCORE MASTER is built with interoperability in mind and is able to accept a large variety of NMOS nodes.

DESTINATION SWITCHING
SCORE MASTER supports ‘make-before-break’ and ‘break-before-make’ destination switching implementations. It can be configured independently for each receiver, so various configurations can co-exist in your infrastructure design.

BROADCAST

RESILIENCY

GRACEFUL NETWORK RESILIENCE
Network failures happen. SCORE MASTER makes recovery transparent by detects the failure and tracks the event as an alarm and well as automatically re-assigns the interrupted streams on different network routes while guaranteeing no over-loading of any links.

HITLESS MERGE (SMPTE 2022-7)
SMPTE 2022-7 is a technique allowing a node to send the same source packaged in 2 different streams travelling on 2 different network routes to the same destination. SCORE MASTER, in collaboration with the nodes, offer a support for hitless merge.

SYSTEM RESILIENCE
SCORE MASTER supports active-active redundancy. The slave is always ready to take control of the system should the master become interrupted.
ORDERING OPTIONS

/ SCORE MASTER sw (per active flows)
/ SCORE MASTER resilience
/ SCORE MASTER HW
/ SCORE EDGE SW
  - clean-switch, NATing
  - probing
/ SCORE EDGE HW
/ Service: setup fee (consultancy and commissioning)

EVS provides consultancy on network topology and provides BOM of third-party network switches to purchase.