H5-RT Datasheet

H5 audits Vision : one integrated technology dedicated to multicast flow visibility.

H5 audits R&D teams worked out a an innovative technology for businesses and service providers to improve the real-time visibility of multicast application flows. With the H5-RT solution, operation teams can deploy a distributed and easy-to-use software and hardware architecture that allows them to track the behavior of critical multicast applications in real time.

H5 solutions provide a powerful visibility solution for network teams, managers in charge of the construction and evolution of any content and information distribution service.

Multicast Flows Monitoring: Down to the packet.

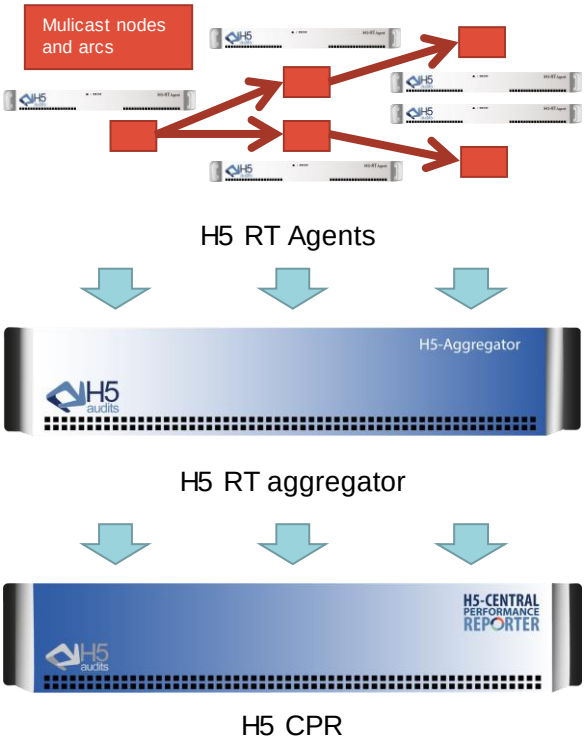
H5-RT agent and H5-RT aggregator appliances have been designed to measure, process, aggregate and store the transit delay of multicast flows across the network with the finest granularity: the packet. And this up to 2TB of data. Teams responsible for service quality and monitoring thus have a solution that allows them not only to characterize the behavior of data and content delivery in the long term but also to trouble shoot the network infrastructure and application traffic drilling down the monitoring data up to individual packet.

H5-RT Architecture: visibility and performance of Multicast flows.

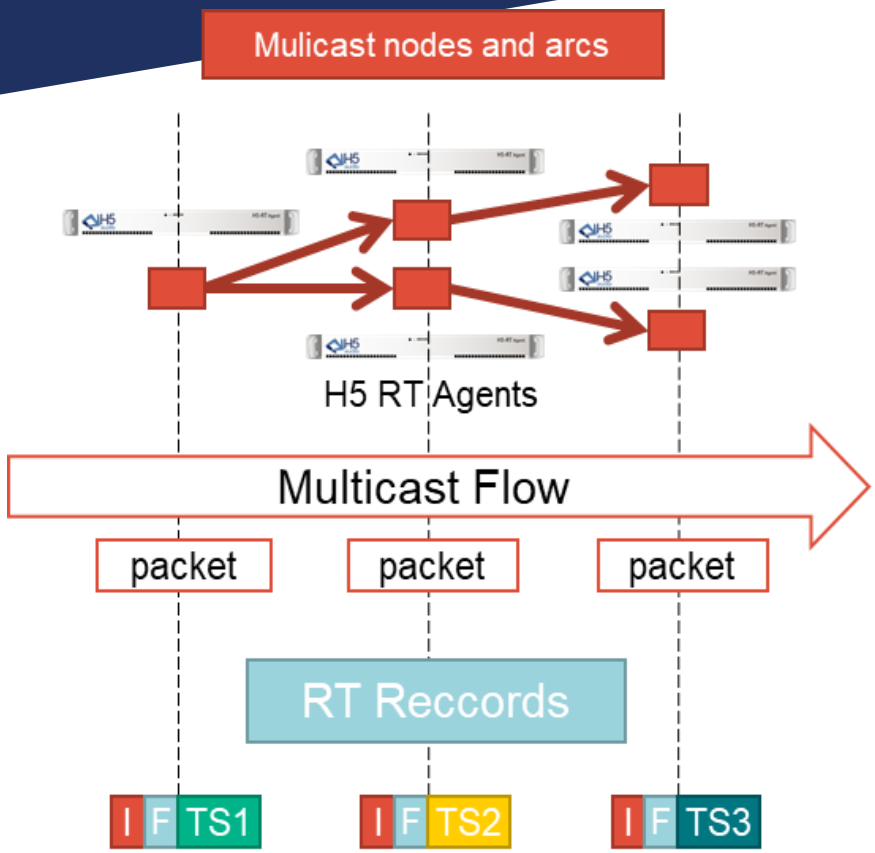
H5-RT Distributed Architecture can be deployed and commissioned within hours.

The RT agents, who are responsible for collecting data, are installed on one or more switch mirror ports or on a network tap and their deployment does not require any modification or interruption of the information system.

The RT Aggregator, responsible for collecting and aggregating data and calculating packet transit delays, dynamically and seamlessly connect to each RT-Agent, automatically download and process performance data for each Multicast flow. The aggregated data is then made available to the H5-CPR to provide dashboards and reporting interfaces.



H5-RT Agent



Main element of the data collection layer of the H5-RT Architecture, the RT Agent captures in real-time multicast traffic and analyzes each flow. Each packet is uniquely identified and synchronized and timestamped in an RT record.

Identification of the multicast flow and the data collection point

The RT Agent supports up to four capture ports identified per site. Collection point data are added to each RT record as well as the unique multicast flow ID.

Unique and adaptive identification of multicast packets

For a given multicast flow the RT Agent supports a unique and configurable identification of each multicast packet. The RT Records are then timestamped to the microsecond with the date of capture of the packets by the listening interface.

Unique packet identification and time stamping allows the RT Aggregator to calculate transit times for each packet through the multicast tree of the network infrastructure.

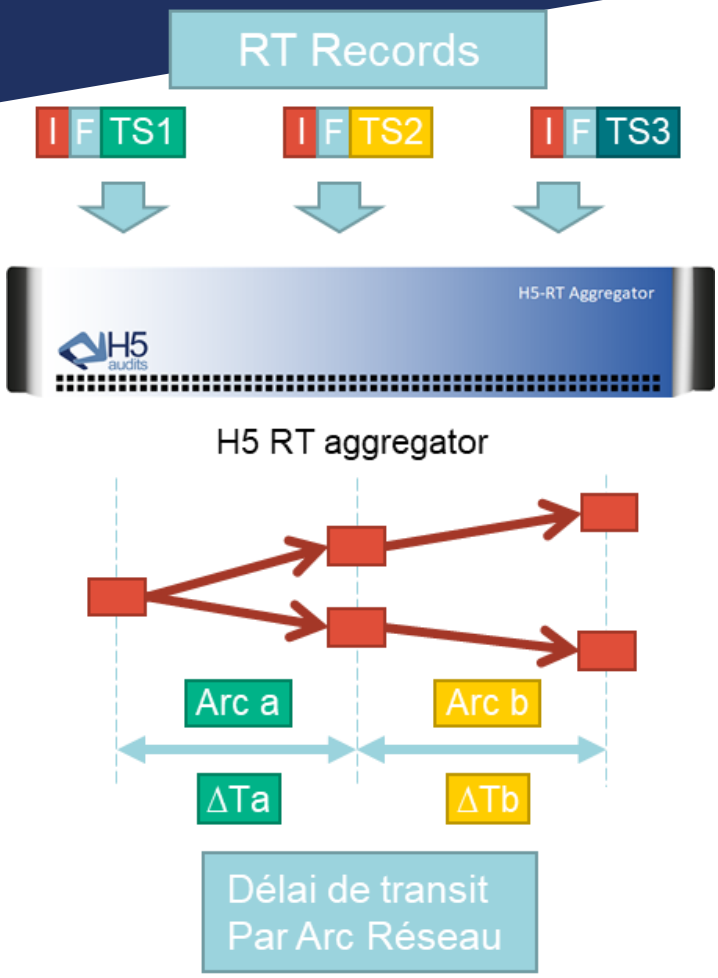
The RT records are grouped by the RT Agents in 1-minute intervals, compressed and made available to the RT Aggregator for download and processing.

RT Agents: Fault Tolerance and Scalability

Depending on the collection point availability, the number of deployed RT Agents can be adapted to support any type and size of transport architecture as well as any volume of Multicast stream by configurable and dynamic packet sampling.

Each element of the H5-RT architecture supports stand-alone storage of monitoring data. The RT Agent can be disconnected from its RT Aggregator and continue capturing and timestamping multicast packets for up to 24 hours.

H5-RT Aggregator



To consolidate the performance data provided by RT Agents, the H5-RT architecture includes an aggregation layer element: the RT aggregator.

Secured pooling of RT Agent

The RT Aggregator periodically pools compressed RT records and has deferred polling capacity for up to 24 hours in case of agent unavailability. A single RT Aggregator can therefore monitor RT Agents over unreliable networks or unsecured network service classes.

Calculation of transit delay per packet

For each multicast flow, the RT Aggregator calculates the transit time of each packet for each network arc defined by the oriented network segment of the multicast propagation tree on the network infrastructure.

The transit delay is then compared to the predefined maximum delay for each arc, and the out-of-delay packets are counted.

Metrics
Packet Volume
Byte Volume
Average Delay
Lost Packets (L)
Out of Delay Packets (OoD)
Failed Packets (L + OoD)

The RT Aggregator provides a range of metrics accessible by multicast flow type and network arc with a 1-minute, 5-miniute, 1-hour, and 1-day time aggregation with the possibility, for purposes of forensics and root cause isolation, drill the data down to the packet level.

Reporting

Each RT Aggregator internally stores up to 2 Terabytes of multicast performance data with packet granularity. This data is accessible by the user via the H5-CPR centralized reporting solution or any third-party reporting tools via a Web Service.

H5-RT Agent (indicative)	
Performance (packet)	50 000pps
Performance (throughput)	200Mbps
Storage	24h
Granularity	Packet
Timestamping	Microsecond

Hardware Specifications (indicative)	
Form factor (H x W x D)	43mm x 426 mm x 356 mm – 1U
Weight (Rack)	9 Kg
Transport Box size (H x W x D)	160mm x 570mm x 500mm
Weight (Transport)	11 Kg
Operating temperature	+10°C to +40°C / +50°F to +95°F
Operating relative humidity	5 to 90%, non-condensing
Operating elevation	0 to + 3 000m / 0 to +10.000ft
Safety, Approvals, Certifications	UL1778/ UL 497A ; CSA107.1 FCC part 15 VDE, EN50091, EN60950
Certifications	FCC /DOC Class B EN5 5022
Electromagnetic Immunity	IEC 801-4 level IV ; 801-5 level III IEC 801-2 level IV ; 801-3 level III 801-4 level IV
Number of power supplies	1
Power consumption	200 Watts
Back panel	4 Ethernet port 10/100/1000 - capture 1 Ethernet port 10/100/1000 - Admin Serial port, Keyboard port, VGA port

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H5 RT Aggregator (indicative)

Storage	2-Térabytes
Granularity	Paquet, Arc Multicast, Minute
Northbound Interfaces	H5-CPR, SOAP API
Multicast volume Metrics	Multicast Packets, Octets
Multicast performance Metrics	Packet transit delay by network arc lost packets, out of delay packets, failed packets

Hardware Specifications (indicative)

Form factor (H x W x D)	86mm x 437 mm x 660 mm – 2U
Weight (Rack)	19 Kg
Transport Box size (H x W x D)	320mm x 570mm x 750mm
Weight (Transport)	24 Kg
Operating temperature	+10°C to +40°C +50°F to +95°F
Operating relative humidity	5% to 90%, non-condensing
Operating elevation	0 to + 3 000m / 0 to +10.000ft
Safety, Approvals, Certifications	UL1778/ UL 497A ; CSA107.1 ; FCC part 15 VDE, EN50091, EN60950
Electromagnetic Immunity	IEC 801-4 level IV 801-5 level III IEC 801-2 level IV 801-3 level III 801-4 level IV
Power Supply	2 units
Power consumption	740 Watts
Back panel	2 x 10/100/1000 Copper Ethernet Admin Port Serial port, Keyboard port, VGA port

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