



 New corporate challenge : quick, accessible and comprehensive network visibility

As communications and applications on IP networks are more and more converging with booming and evolving network usages, enterprises, service providers and government organizations, in order to support their daily operations, need to **understand quickly and comprehensively** what's happening with the business applications running on their network. Moreover corporations must provide network visibility to all the IT teams **with reduced operational costs and IT investments**.

 H5 audits vision : network visibility technology

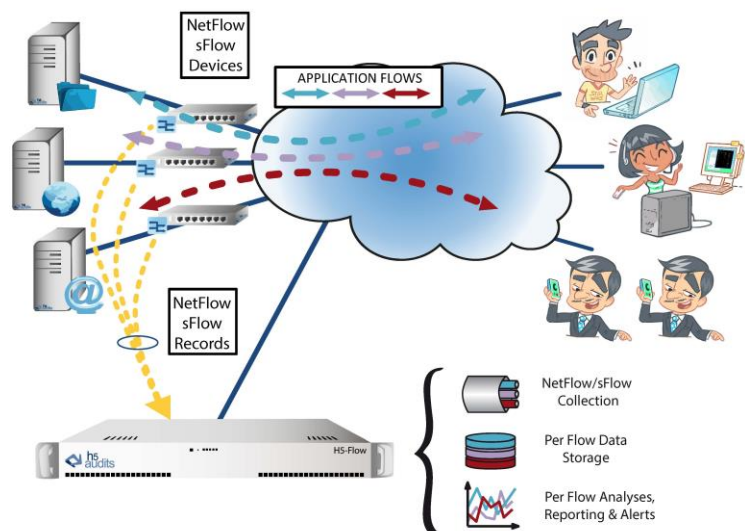
Taking advantage of a 20-year experience running network audits on the enterprise market, H5 audits designed an innovative technology to enable enterprises, service providers and governments to enhance their global network application visibility. With H5 audits, corporations can deploy comprehensive and easy to use software and solution architecture that allows the various IT teams to see understand and share clear and comprehensive information on how applications behave on the enterprise network. The solution introduced with H5-Flow provides a powerful network visibility solution not only for the network operations center but also for network managers building the network and planning the growth and the changes and for the helpdesk supporting the users on a daily basis.

## H5-FLOW H5-Flow-Ent & H5-Flow-DC

| Product Range | Business flows support | Volume monitoring | Performance monitoring | Packet Capture | Interfaces                                      |
|---------------|------------------------|-------------------|------------------------|----------------|-------------------------------------------------|
| H5-Flow-Ent   | ✓                      | ✓                 |                        |                | 50 - 200 interfaces<br>50K simultaneous flows   |
| H5-Flow-DC    | ✓                      | ✓                 |                        |                | Illimited Interfaces<br>500K simultaneous flows |

**H5-Flow solution : network visibility made safe, easy and cost effective**

The H5-Flow solution can easily be deployed in any network it requires neither complex configuration nor architecture design; it just requires NetFlow and sFlow to be enabled on network nodes and the H5-Flow solution starts to collect flow records immediately without further configuration and delivers the first network application reports and data a few minutes after power on.



### H5-Flow : powerful all-in-one-box architecture

The H5-Flow does not require any external reporting portal or storage space to operate. NetFlow and sFlow records collection, application flow analysis and aggregation, data extraction, data storage and data presentation functions are all provided by the solution.



- ✓ Risk Reduction
- ✓ Finger Pointing Problem Resolution
- ✓ Early Incident Warning
- ✓ Operation Assessment
- ✓ Infrastructure Tuning
- ✓ Enhance productivity
- ✓ Governance
- ✓ Acceleration Incident Solving
- ✓ Escalation Ration Reduction

### H5-Flow solution : real-time NetFlow and sFlow records collector.

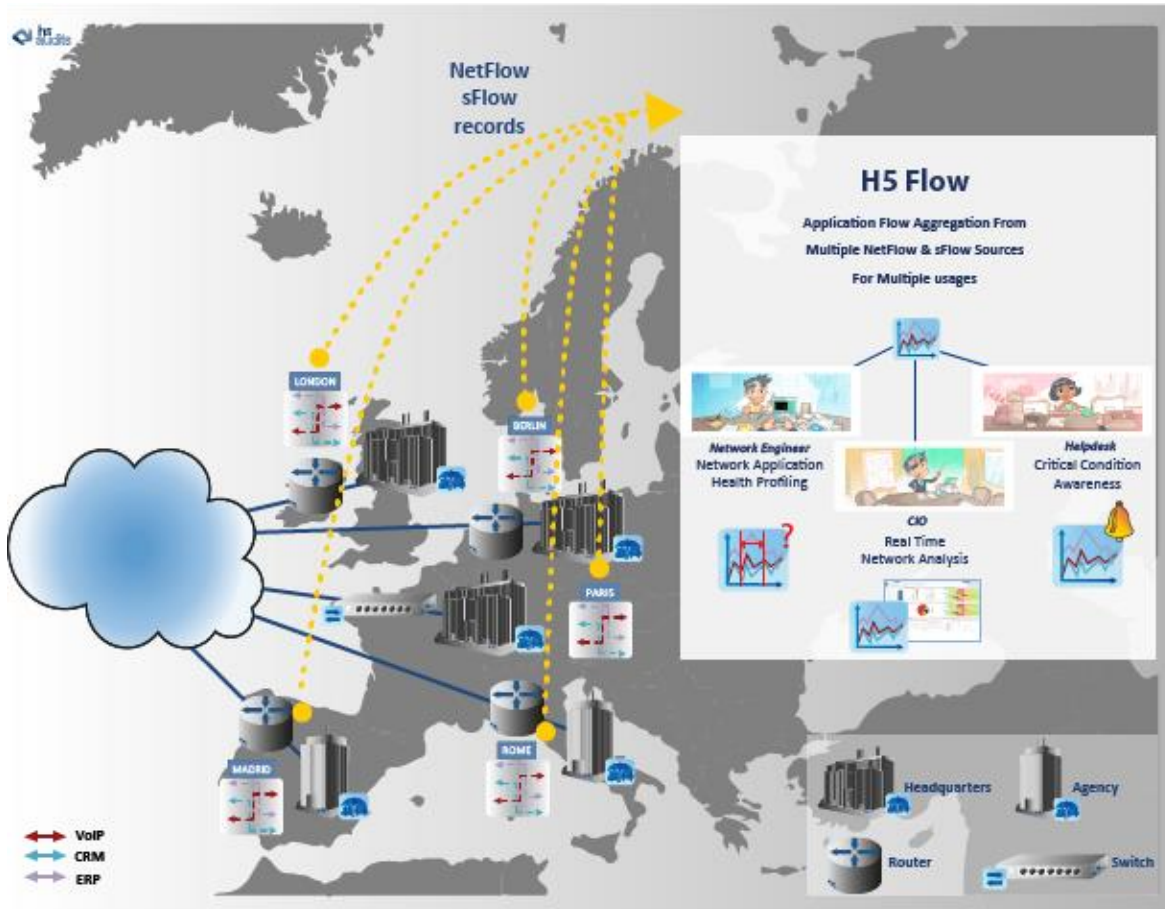
The main task of the H5-Flow solution consists in collecting in real-time NetFlow and sFlow information. A number of network devices have the capacity to analyze the network application flows transferred through their ports and to create records containing information such as packet and bytes sent per server, per client et per application. The network equipment can also be configured to forward these records across UDP streams such as NetFlow and sFlow.

The H5-Flow solution then collects the NetFlow and sFlow records from the network, saves and aggregates the network application flow informations they contain into a local and real-time database to allow network operation teams to create analyses dashboards and web reports or generate alerts based on the behavior of network applications on any location of the corporate network.

### Monitored object and business flows

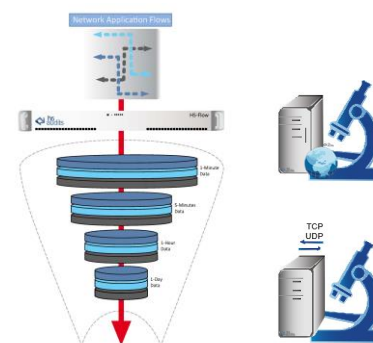
With **monitored objects** network administrators can create or import their network address plan to group IP nodes and process application performance metrics for corporate sites, branches offices, server farms, etc. but also isolate and highlight low volume conversations that would be lost in the conversation cloud.

With **business flows**, in conjunction or not with watched objects, network managers can classify their custom and business applications and track them specifically over time.



## Data aggregation over time

All NetFlow and sFlow metrics for the top conversations are stored in a database for quick access with the default granularity of 1 minute for a period of one month. The persistence of the information over large time periods is guaranteed by a robust and intelligent aggregation process that reduces the time granularity while maintaining the conversation records. Network operation engineers can access to the full top conversation metrics months after and can easily compare application behavior and performance for different period of time.



| H5-Flow aggregation objects |                                                                         |
|-----------------------------|-------------------------------------------------------------------------|
| Total traffic               | Global traffic captured by the appliance.                               |
| Top IP addresses            | Top IP talkers from global captured traffic by Byte volume.             |
| Top IP conversations        | Top IP conversations from global traffic by Byte volume.                |
| IP Protocols                | TCP, UDP protocols identified by port from global traffic.              |
| Device                      | Device sending flow records                                             |
| Interface                   | Interface routing the flow on the device as reported by the flow record |
| VLANs                       | VLANs 802.1Q detected on Captured traffic                               |
| Watched objects             | Table of active watched objects                                         |
| Business flows              | Table of active business s flows                                        |

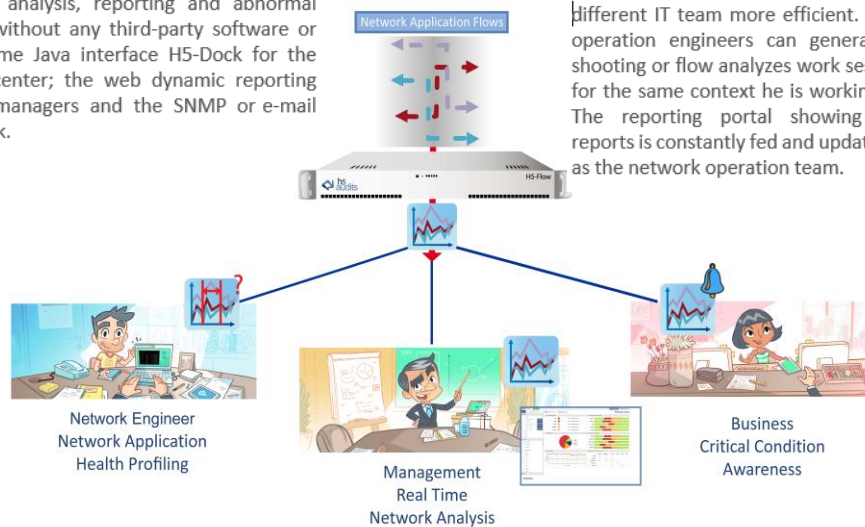
## Aggregation objects

The key feature for forensics and drilldown strategies with H5-Flow solution are the aggregation objects.

When visualizing the network conversation network operations engineers always starts with highest aggregation objects to get the most global picture of the network situation and drilldown to individual nodes and conversation for more detailed views to qualify incidents and behavior.

### H5-Flow : one-box-to-serve-them-all

The H5-Flow provides all the IT teams with the all services in a single box for analysis, reporting and abnormal situation awareness without any third-party software or service : The real-time Java interface H5-Dock for the network operations center; the web dynamic reporting portal for network managers and the SNMP or e-mail alerts for the helpdesk.



### Enhanced IT team collaboration

The services provided by H5-Flow are tightly integrated and make the collaboration between the different IT team more efficient. For instance, network operation engineers can generate, within a trouble shooting or flow analyzes work session, reports or alerts for the same context he is working on with one tick. The reporting portal showing scheduled or historic reports is constantly fed and updated with the same data as the network operation team.

### H5-Performance Reporter : simple, comprehensive and intuitive reporting

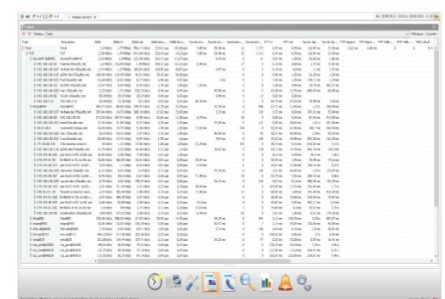


**H5-Performance Reporter** is the H5-Solutions' web interface providing a simple, comprehensive and intuitive reporting with an easy access to an ergonomic view and an instantaneous dashboard. H5-Performance Reporter interface allows all business audiences a tailored use adapted to their needs. In addition of easing communication within the company, H5-Performance Reporter sends alerts to all involved teams when incidents occur and enables root causes' analysis: you and teams are then becoming proactive. Via its interface, H5-Performance Reporter has an instantaneous and complete view of your entire network and your applications. You know the first service that IT department must provide to the company is to maintain the performance and availability of applications and network. This H5-Performance Reporter interface provides built-in reports and customized reports in which you organize your own way folders, subfolders or reports. Its ergonomics and its easy handling allow everyone to create, modify and analyze reports. **H5-Performance Reporter is a common solution to all stake- holders of the company**, allowing uncomplex exchanges between all levels of the company.

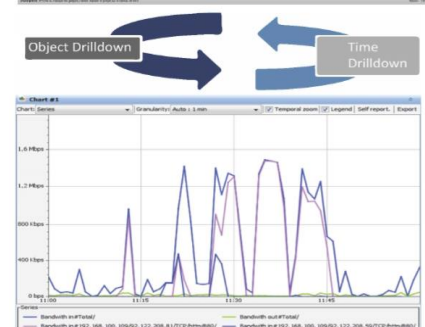
### H5-Dock : powerful Java client for real-time flow analysis

The H5-Flow provides in-one-box all services for all the IT teams without any third-party software or service. The real-time Java interface H5-Dock is the standard graphical user interface provided by the H5-Flow to network operations engineers. It is downloaded from the H5-Flow Web interface and run on any workstation using Web Start standard. H5-Dock loads data in real-time from the appliance network application flow database and dynamically displays the node and metrics information on pre-defined and custom tables and charts views. Multiple views can be created on a single H5-Dock instance to observe the network flows over different time periods and geographic regions and multiple solutions.

The H5-Dock GUI provides a powerful set of analyzes tools including the ability to drill down successively from table views to time chart view to quickly isolate detailed data on specific or abnormal network conditions over a large period and thousands of IT conversations. The network operations engineers can easily design troubleshooting scenario that can be saved loaded and shared within a few clicks. The typical abnormal situations and network incidents observed on a daily basis contribute to build a knowledge base of troubleshooting conditions that gradually improve the productivity of the network operations center and reduce the network application incidents downtime.

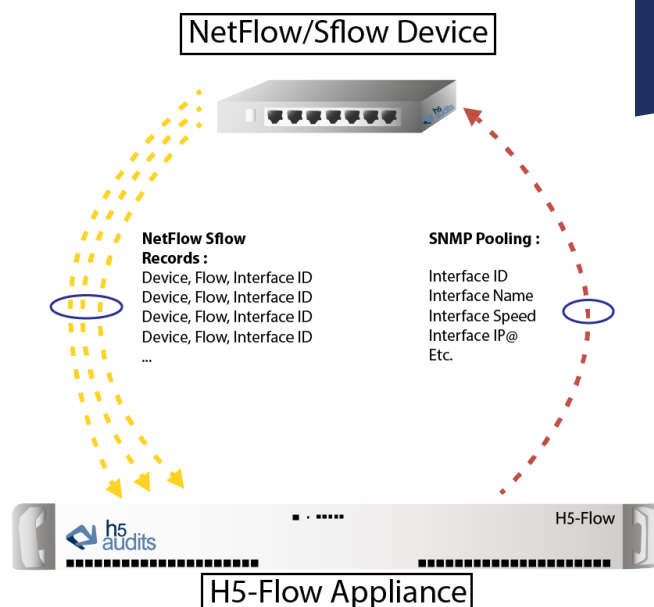


| Source      | Destination | Protocol | Port | Bytes | Packets | Flow ID | Flow Type | Flow Status | Flow Count | Flow Size | Flow Time | Flow Error | Flow Alert |
|-------------|-------------|----------|------|-------|---------|---------|-----------|-------------|------------|-----------|-----------|------------|------------|
| 192.168.1.1 | 192.168.1.2 | TCP      | 80   | 1024  | 10      | 1001    | Normal    | Active      | 1          | 1024      | 10        | 0          | 0          |
| 192.168.1.1 | 192.168.1.2 | TCP      | 80   | 2048  | 20      | 1002    | Normal    | Active      | 2          | 2048      | 20        | 0          | 0          |
| 192.168.1.1 | 192.168.1.2 | TCP      | 80   | 3072  | 30      | 1003    | Normal    | Active      | 3          | 3072      | 30        | 0          | 0          |
| 192.168.1.1 | 192.168.1.2 | TCP      | 80   | 4096  | 40      | 1004    | Normal    | Active      | 4          | 4096      | 40        | 0          | 0          |
| 192.168.1.1 | 192.168.1.2 | TCP      | 80   | 5120  | 50      | 1005    | Normal    | Active      | 5          | 5120      | 50        | 0          | 0          |



### NetFlow – SNMP : information correlation

NetFlow provides very useful information about the way application flows are routed across the device, however this information is usually cryptic and not usable. NetFlow records interface field refer to the SNMP index of the device interface and not to any understandable name or reference. In order to improve the NetFlow interface information readability, the H5-Flow proactively launches SNMP polling requests when any new device interface is detected on the NetFlow records in order to populate the flow database with relevant device interface information such as interface name or interface IP address. The network manager can therefore observe and analyze the flows across interfaces identified with well-known references.



### About NetFlow

NetFlow is traffic monitoring technology developed and supported by Cisco and integrated to a wide range of network nodes such as routers, network switches, servers, etc. NetFlow provides information (essentially volume information) about the application flows defined as IP session between two IP nodes across device interfaces. The NetFlow information is packaged in NetFlow records and sends them across UDP streams to NetFlow collectors such as H5-Flow solution. For more information please check: [http://www.cisco.com/en/US/products/ps6601/products\\_ios\\_protocol\\_gro up\\_home.html](http://www.cisco.com/en/US/products/ps6601/products_ios_protocol_gro up_home.html)

### About sFlow

SFlow is a open and interoperable network traffic monitoring technology similar to NetFlow. It is supported by a number of network infrastructure vendors such as Alcatel-Lucent, Juniper, Extreme, etc. SFlow provides information about network application flow transmitted on the switching backplane of L2 and L3 switches. Like NetFlow, sFlow information is packaged in sFlow records and sent across UDP streams to sFlow collectors such as H5-Flow solution. For more information please check: <http://www.sflow.org/products/network.php>

### H5-Flow solution products range

H5-Flow solution product range allows network managers to achieve 100% percent network visibility in a fast-growing network infrastructure using H5-Flow software that is common to all H5-Flow solutions. The choice of appliance part number only depends on the number of NetFlow and sFlow interfaces to be collected and up served. The H5-Flow Enterprise solution supports between 50 and 200 NetFlow and sFlow interfaces & max 50.000 simultaneous flows. The H5-Flow-DC (Datacenter) solution supports unlimited NetFlow and sFlow interfaces & max 500.000 simultaneous flows.

|                    |                                                                                      |                                                      |                                          |
|--------------------|--------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------|
| <b>H5-Flow-Ent</b> |  | 50 – 200 interfaces<br>50K flux simultanés           | PME/PMI<br>Entreprise                    |
| <b>H5-Flow-DC</b>  |  | Interfaces illimitées<br>100K – 500K flux simultanés | Datacenter<br>Fournisseur<br>de services |