

Product Brochure

# Identity Defined Networking (IDN)

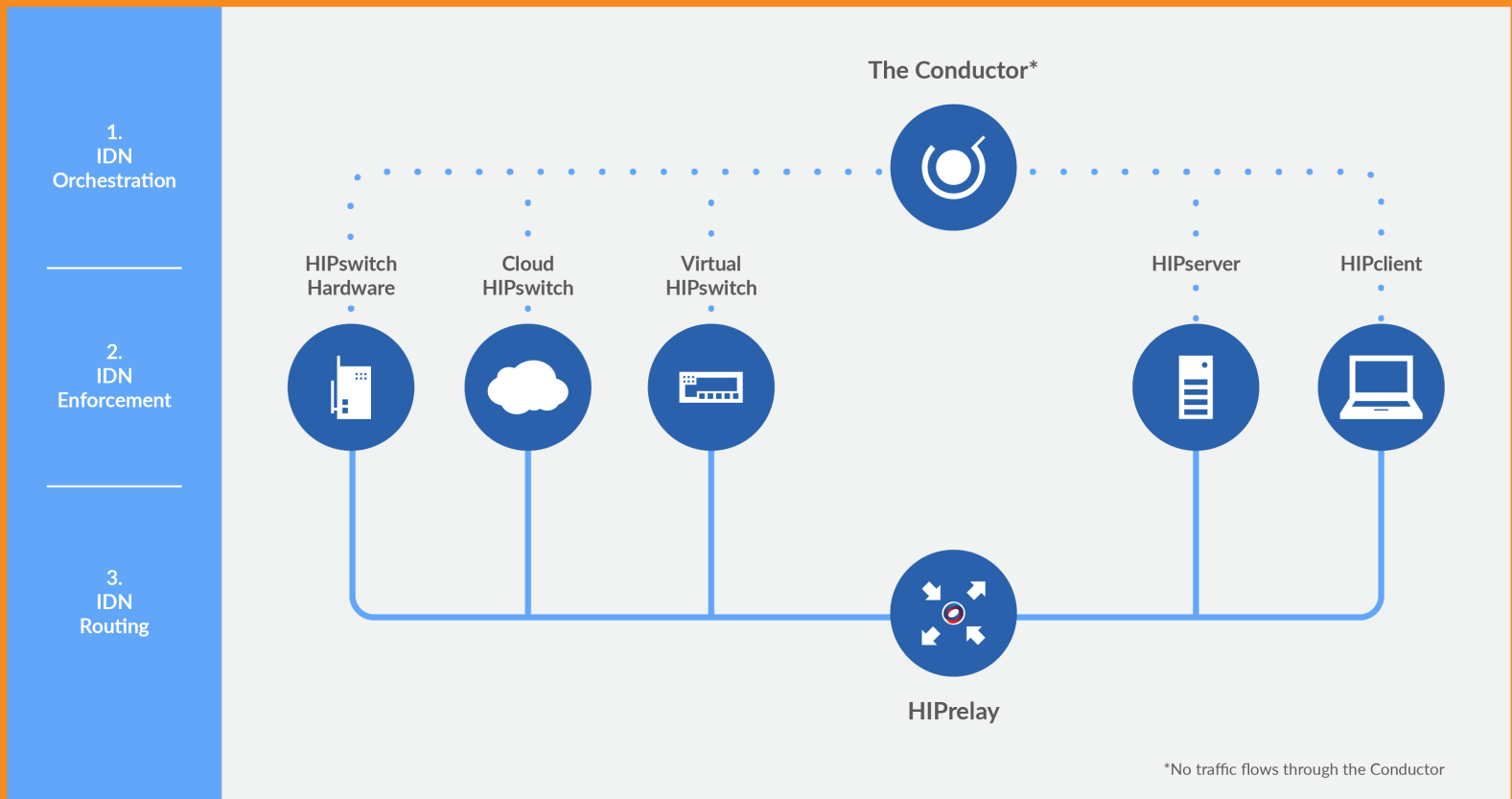
LAN, WAN, and cloud segmentation made simple.

# Table of Contents

Identity Defined Networking (IDN)	3
IDN Orchestration	4
IDN Enforcement	5
IDN Routing	9

## Tempered Networks Products

Create your own instant overlay networks. Any device. Any connectivity medium. Any Location.



# Identity Defined Networking (IDN)

Eliminate network complexity and securely connect any device, over any network, across any location, with little to no change to the underlying network infrastructure.

An IDN consists of three software components:



## Orchestration

### The Conductor

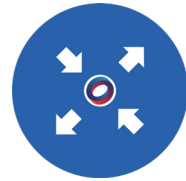
Creates, manages, and automates distributed policy to all HIP service and HIPrelay endpoints



## Enforcement

### HIP Service

Runs on or adjacent to any host and acts as the network policy and security enforcement point



## Routing

### HIPrelay

World's first Identity Based Router which provides machine-to-machine connectivity between private or non-routable endpoints

## Identity Defined Networking Fabric: Flexible Deployment Options

### Any Location



Branch Office



Campus / Shared Network



Public / Private Cloud



Remote Site

### Any Connectivity Medium



Cellular



Radio



Ethernet



Wi-Fi

### Any Device



Servers, Laptops, PCs, Tablets & Phones



Cloud Workloads & Virtual Machines



SCADA & Industrial Control Systems (ICS)



Internet of Things (IoT)

# IDN Orchestration

Eliminate network complexity and easily manage distributed policy to all your HIP Service endpoints.



## The Conductor

IDN's powerful policy management and orchestration engine

### The Conductor makes it simple to:

- Gain deeper visibility with a centralized, intuitive dashboard that enables you to see the status of every protected device and resource in your network
- Enforce explicit trust relationships through device whitelisting based on Cryptographic IDs issued to every HIP Service
- Quickly and easily protect and network every device in your organization using IDN overlays
- Seamlessly integrate with other workloads such as directories, SIEMs, monitoring tools, and WAFs through our RESTful API
- Rest easy knowing that traffic never flows through the Conductor, so it will never be the single point of failure of an IDN overlay
- Optional High Availability (HA) configurations are available

### Form Factors



Hardware



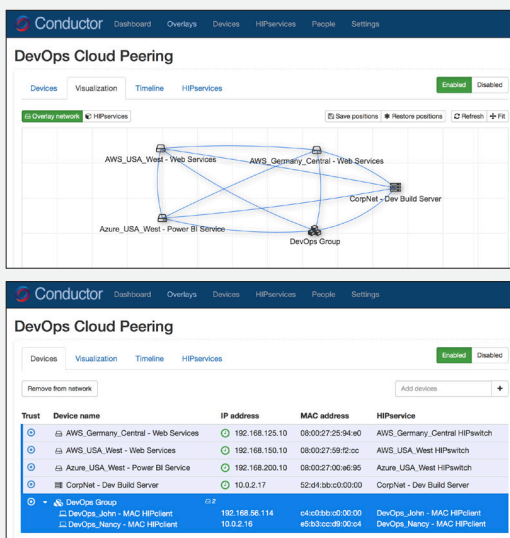
Virtual Instance



Cloud Instance



FIPS Add-On Available



# IDN Enforcement

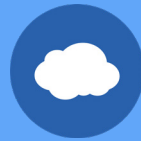
The enforcement points of Conductor-authored network policy. Available as hardware, virtual deployments, cloud instances, clients/server software, or embedded in your own technology — HIP Services cloak, encrypt, route, and segment all managed IP resources in your IDN deployment

## HIPswitch Cloud and Virtual

By removing the limitations of IP based networking IDN makes it easy to spin up and tear down public or private cloud networks. You can now deploy segmentation across enterprise, remote, and cloud environments, with the same networking and security context and secure access from anywhere in the world.

PRODUCT	PLATFORMS
HIPswitch for Cloud	Amazon Web Services (AWS)
	Microsoft Azure
	Google Cloud Platform (GCP)

PRODUCT	PLATFORMS
HIPswitch for Virtual	VMWare ESXi 5.x/6.x
	Microsoft Hyper-V



### HIPswitch for Cloud

Easily connect, protect, segment, move, failover, and disconnect cloud-deployed workloads anywhere in the world — instantly

#### With HIPswitch for Cloud you can:

- Deploy and maintain intra-cloud, cloud-to-cloud, and cloud-to-datacenter communications — simply, quickly, and securely
- Easily connect any device(s) — including non-routable devices, non-IP based protocols, and IoT endpoints



#### HIPrelay Add-on Available



### HIPswitch for Virtual

Easily connect, protect, segment, move, failover, and disconnect virtualized workloads anywhere in the world — instantly

#### With HIPswitch for Virtual you can:

- Deploy as a high availability pair for mission-critical workloads
- Easily connect any device(s) — including non-routable devices, non-IP based protocols, and IoT endpoints — with the optional HIPrelay add-on



#### HIPrelay Add-on Available

## HIPswitch Hardware Platforms

Get the flexibility you need to connect and protect endpoints in any environment — from IoT devices in far-flung remote locations to servers in your datacenter — with HIPswitch hardware appliances



### HIPswitch 100 series

Purpose built for commercial and industrial environments, the HIPswitch 100 is the ideal choice for machines that can't have software directly installed or effectively protect themselves.

#### With HIPswitch 100 you can:

- Gain maximum connectivity and bridge networks with optional cellular capabilities through AT&T, GCI Alaska, T-Mobile, Verizon, and Rogers and Telus
- Protect any endpoint, from medical devices and Point of Sale (PoS) terminals, to SCADA, IoT, and everything in between
- Use your preferred connectivity medium including wired Ethernet, Serial-Over-IP, and cellular (2G, 3G, 4G LTE)
- Save on CapEx and OpEx with automatic failover and cellular connectivity that can replace your cell-enabled modems



### HIPswitch 250 series

Rugged, powerful, versatile: the HIPswitch 250 is a commercial IoT gateway that is well suited for industrial deployments such as Industrial Control Systems (ICS) or SCADA systems and distributed, field-deployed machines

#### With HIPswitch 250 you can:

- Deploy and activate an instant overlay network in as little as 15 minutes with no changes to underlay network
- Eliminate the cost, complexity, and exposure of FWs/VPNs with 3-click LAN and WAN micro-segmentation
- Buy only what you need, when you need it, with flexible throughput-based software licensing and bursting at no charge
- Save on CapEx and OpEx with dual cellular modems, and smart Link Manager for millisecond failover
- Prevent attacks like MiTM with end-to-end AES 256 encryption



## HIPswitch 500 series

Support data centers, mission-critical applications, and servers with sensitive personally identifiable information (PII) across your enterprise organization with the scalable, secure, 1U rack-mounted, HIPswitch 500

### With HIPswitch 500 you can:

- Gain maximum scalability with eight standard Gigabit Ethernet ports and optional SFP and SFP+ expansion modules
- Start small and pay-as-you-grow with variable throughput software subscriptions
- Rest assured that sensitive resources like financial servers, HR apps, hosts with PII, and 3rd party web services are secured, encrypted, and cloaked
- Avoid downtime with seamless failover through optional HA configurations
- Easily connect any device(s)—including non-routable devices and non-IP based protocols—with the optional HIPrelay add on



**HIPrelay Add-on Available**



**FIPS Add-on Available**

## Client / Server / Embedded Solutions

Bring the power of IDN to any endpoint in your network. Our lightweight software is available for deployment on your servers, laptops, smartphones, tablets, and even custom applications.



PRODUCT	PLATFORMS
HIPclient Solutions	Windows 7/8/10 (32/64-Bit) macOS/OSX and iOS

## HIPclient Solutions

Give laptops, PCs, tablets, and smartphones a trusted and verifiable identity and enable a variety of security, networking, and segmentation options—all you need is a lightweight app

### With HIPclient you can:

- Build secure, micro-segmented workgroups and grant server access from anywhere in the world
- Use HIP invitation and the Conductor to invite people with whitelisted devices to join an IDN overlay in just five minutes
- Grant access with little to no change in the underlying switching and routing infrastructure
- Integrate LDAP/Active Directory Services for automated overlay membership and communication policy



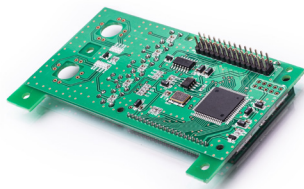
## HIPserver solutions

Give individual servers a trusted and verifiable identity, pushing software defined segmentation and encryption down to the server level

### With HIPserver you can:

- Easily connect, move, peer, segment, and encrypt physical, virtual, and cloud resources and workload communication
- Avoid being constrained by the IP limitations of your underlay network
- Overcome traditional IP and DNS schema, networking, and security constraints
- Limit discovery and access to your servers to only authenticated, authorized, and accountable machines

PRODUCT	PLATFORMS
HIPserver Solutions	Windows 7,8,10
	Server 2008 R2, 2012 R2, 2016
	Linux Centos 6.9, 7
	Ubuntu 16
	Fedora 25 (REHL compatible)



## Embedded Solutions

Connect and protect your custom and proprietary applications and hardware through baked-in, device-based trust with Tempered Networks' embedded software and firmware

### With Embedded Solutions you can:

- Embed into nearly any device, app, or service
- Build device-based trust into any app including mobile, web-based, and fat client
- Meet custom design requirements for specific devices and architectures
- Infuse native connectivity and security into custom hardware such as IP cameras, pumps, POE switches, IP phones, and IoT sensors
- Give native identity to your hardware and applications

**Contact [info@temperednetworks.com](mailto:info@temperednetworks.com) for more information on embedded solutions**



# IDN Routing

As the world's first identity based router, the HIPrelay is available as an add-on for the HIPswitch 500 and HIPswitch for virtual and cloud.



## HIPrelay

The HIPrelay is an Identity Based Router which authorizes, connects and encrypts HIP end point to HIP end point (peer-to-peer) traffic between private and/or non-routable endpoints.

### With the HIPrelay you can:

- Deploy and activate secure peer-to-peer networking in as little as 15 minutes, with little no change to the existing network
- Punch through costly, impassable LAN and WAN barriers like multi-NAT and Carrier Grade NAT
- Quietly, predictably, and directly connect any resource—even those that don't have publicly accessible IP addresses
- Prevent all lateral network movement and eliminate command and control with end-to-end AES 256 encryption, cloaking, and unbreakable segmentation
- Avoid the need for complex LAN/WAN Layer 3 rules sets, IP addresses, and traditional routing protocols
- Deploy in regional clusters, providing superior availability, network performance, and data governance architecture

### Form Factors



**HIPswitch 500**



**HIPswitch for Cloud**



**Virtual HIPswitch**

**TEMPERED**  
NETWORKS®

Contact [sales@temperednetworks.com](mailto:sales@temperednetworks.com) to learn more, or find a Tempered Networks reseller near you