



Software-based IPv6 Services

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Who are we...

Vidder, Inc. is the leader in developing network security solutions for defense, intelligence, and enterprise environments. Customers rely on Vidder for its expertise in areas such as encryption, authentication, access control, ad-hoc networking, mobility and disruption tolerant networking.

IPv6 Misconceptions

- IPv6 features require a native network
- IPv4 & IPv6 are incompatible
- IPv6 has no practical application

The Cross Organization Collaboration Challenge

DHS



**I have a
collaboration app**



Sheriff



**We don't have the money
to change our applications**

FBI / DoJ



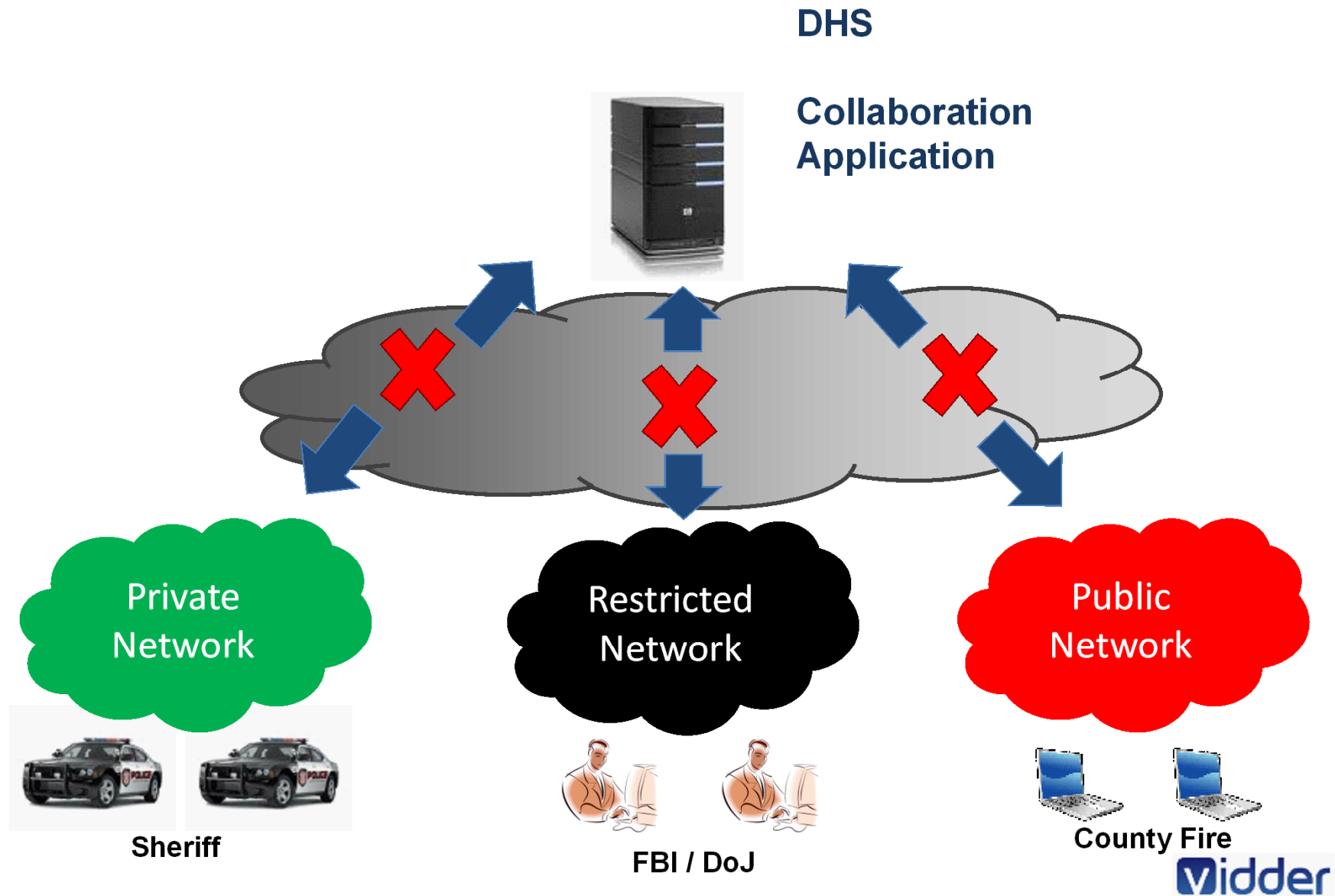
**The network must meet
security guidelines**

County Fire

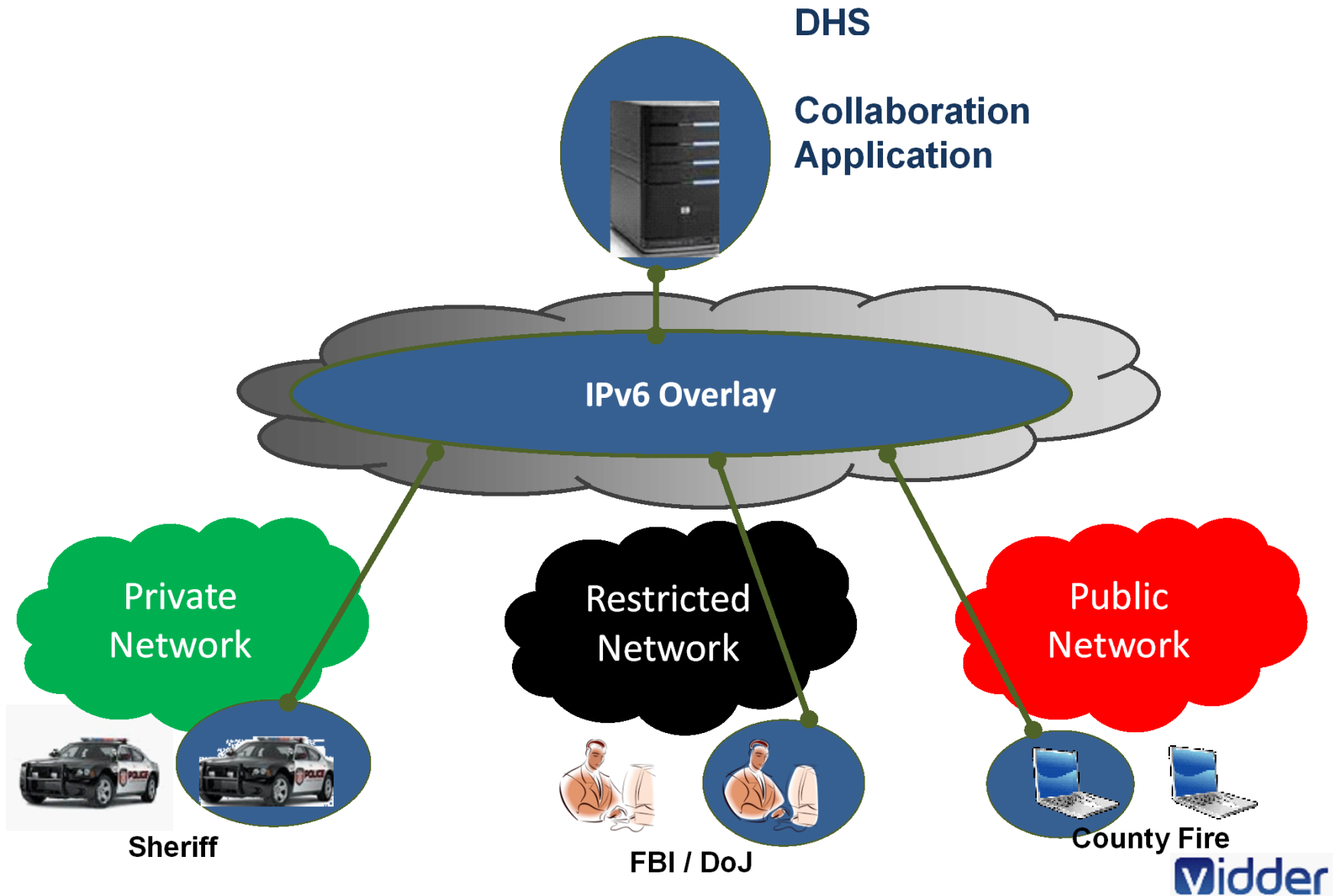


I just have a PC

Networking Challenge: Address Collision & Security



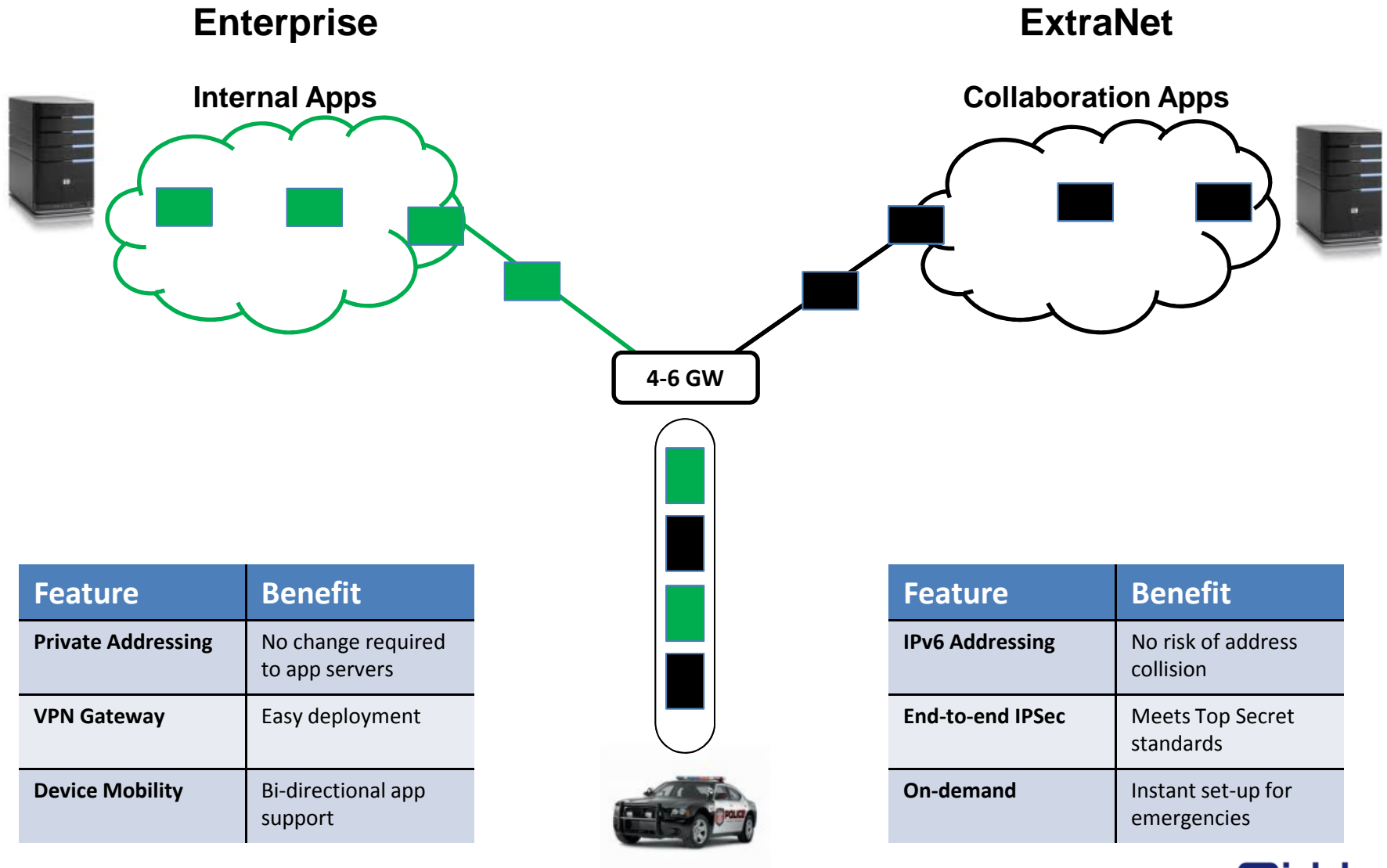
Secure IPv6 Overlay: On-Demand Extranet



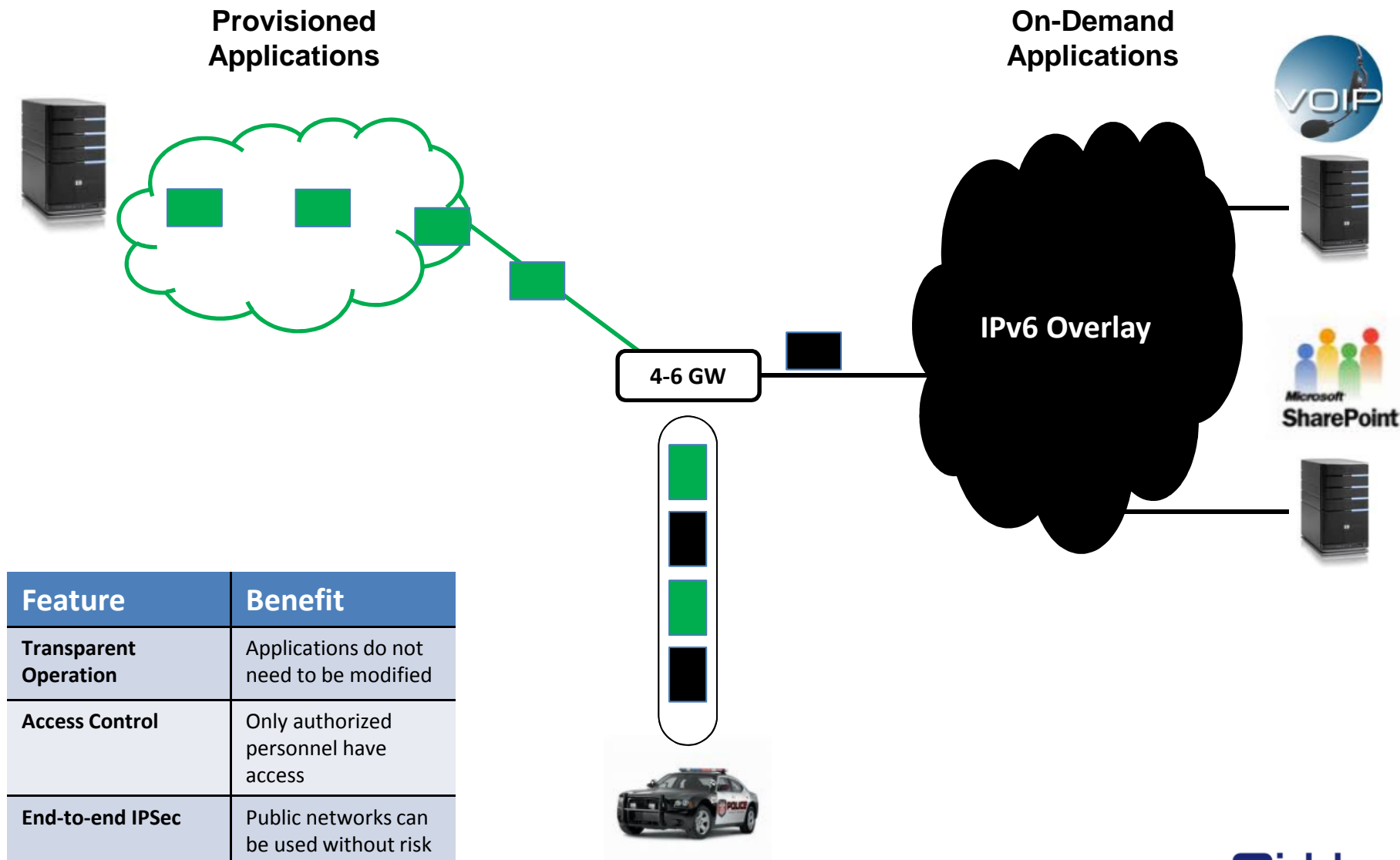
IPv6 Overlay Highlights

- Simultaneous Enterprise & Extranet VPN Operation
 - Organizations can maintain their existing apps & network addressing while connecting to an external hosted application
- Instant Access to Collaboration Applications
 - First responders can instantly share data without disruption to their communications
- DoD Black Core Security Model
 - End-to-end IPSec + address hiding + disruption tolerant networking provide strong counter-measure against cyber-attacks

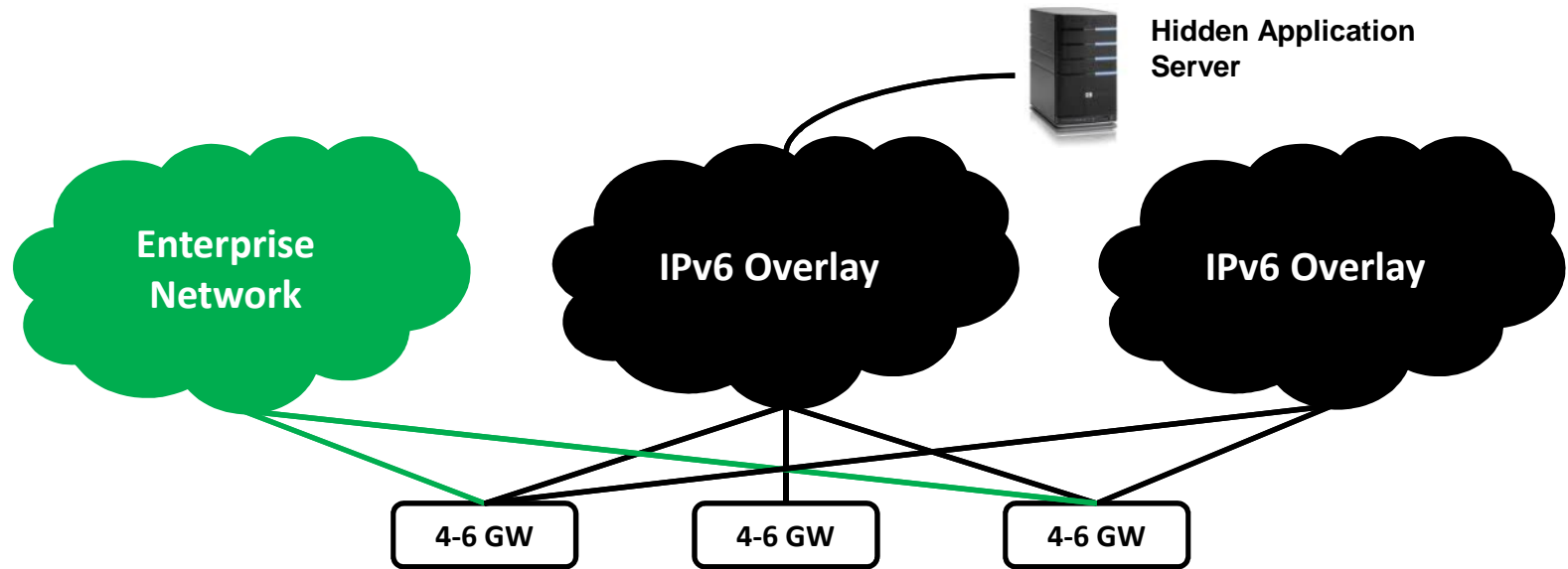
Simultaneous Enterprise & Extranet VPN Operation



Instant Access to Collaboration Applications

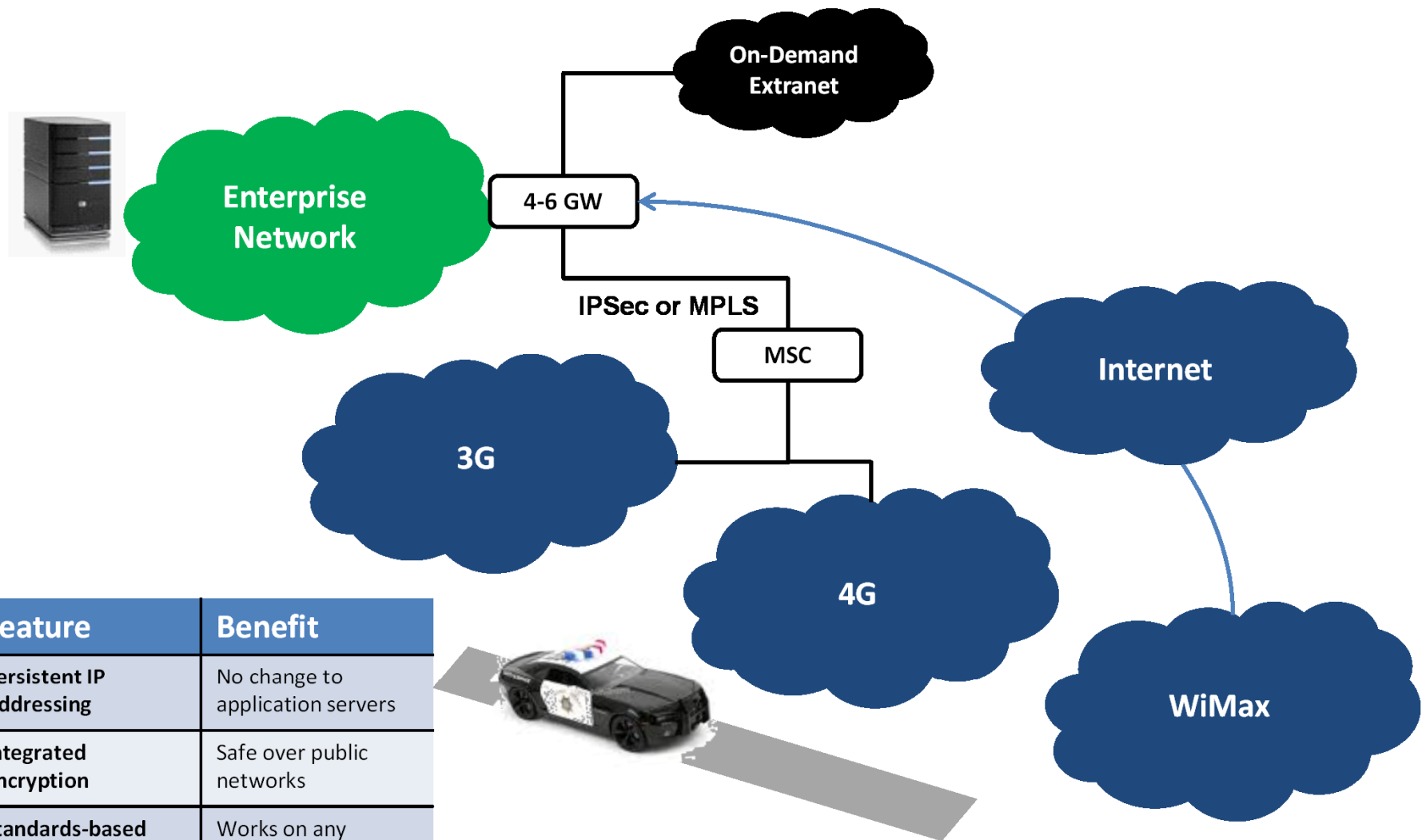


DoD Black Core Security Model



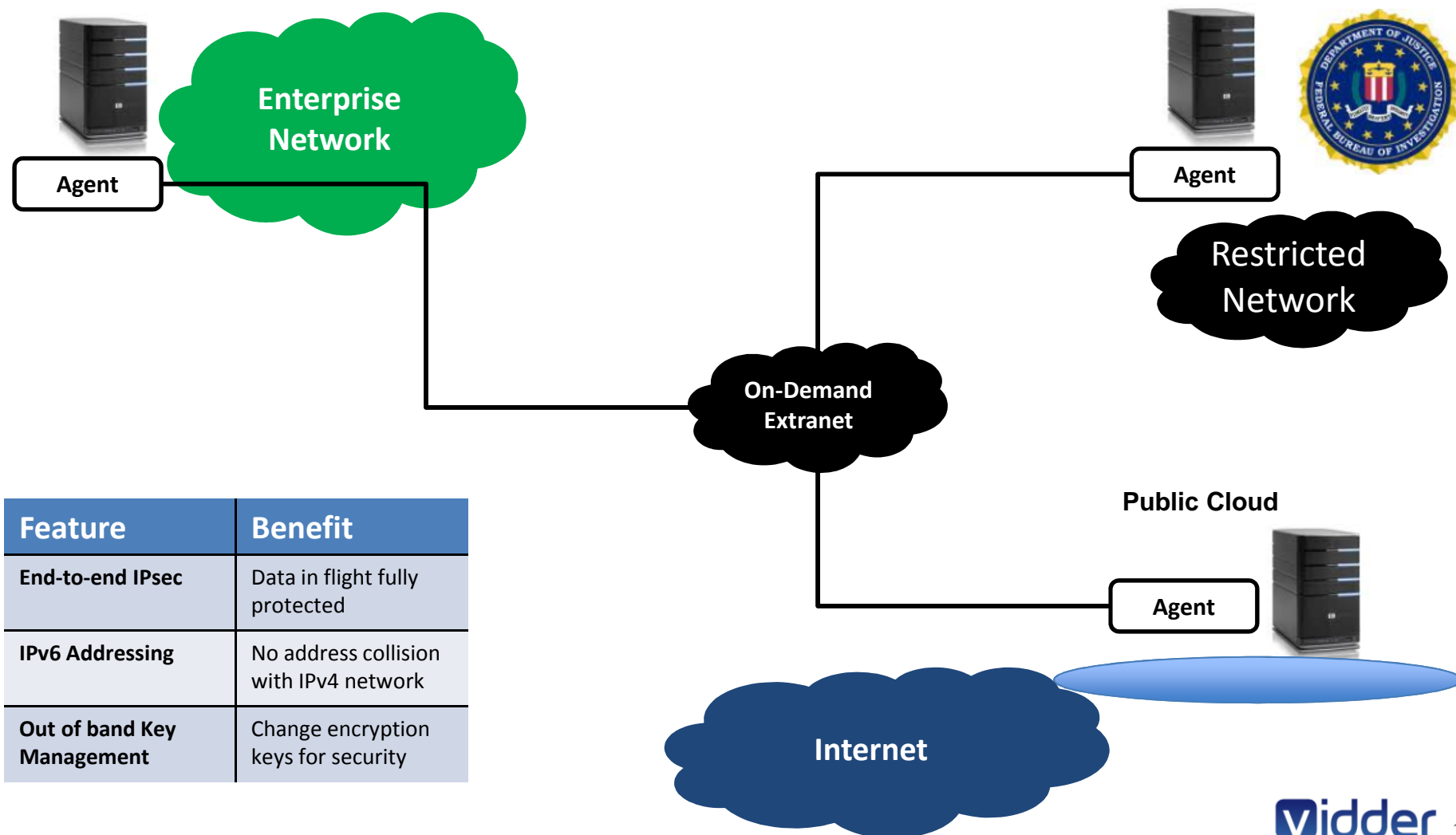
Feature	Benefit
End-to-end IPsec	No human intervention needed
Address Hiding	Attackers can't find the server to attack it
Disruption Tolerant Networking	Reliably access services even over spotty network connections

Nomadic Roaming: Police Car on 3G/4G/Wimax

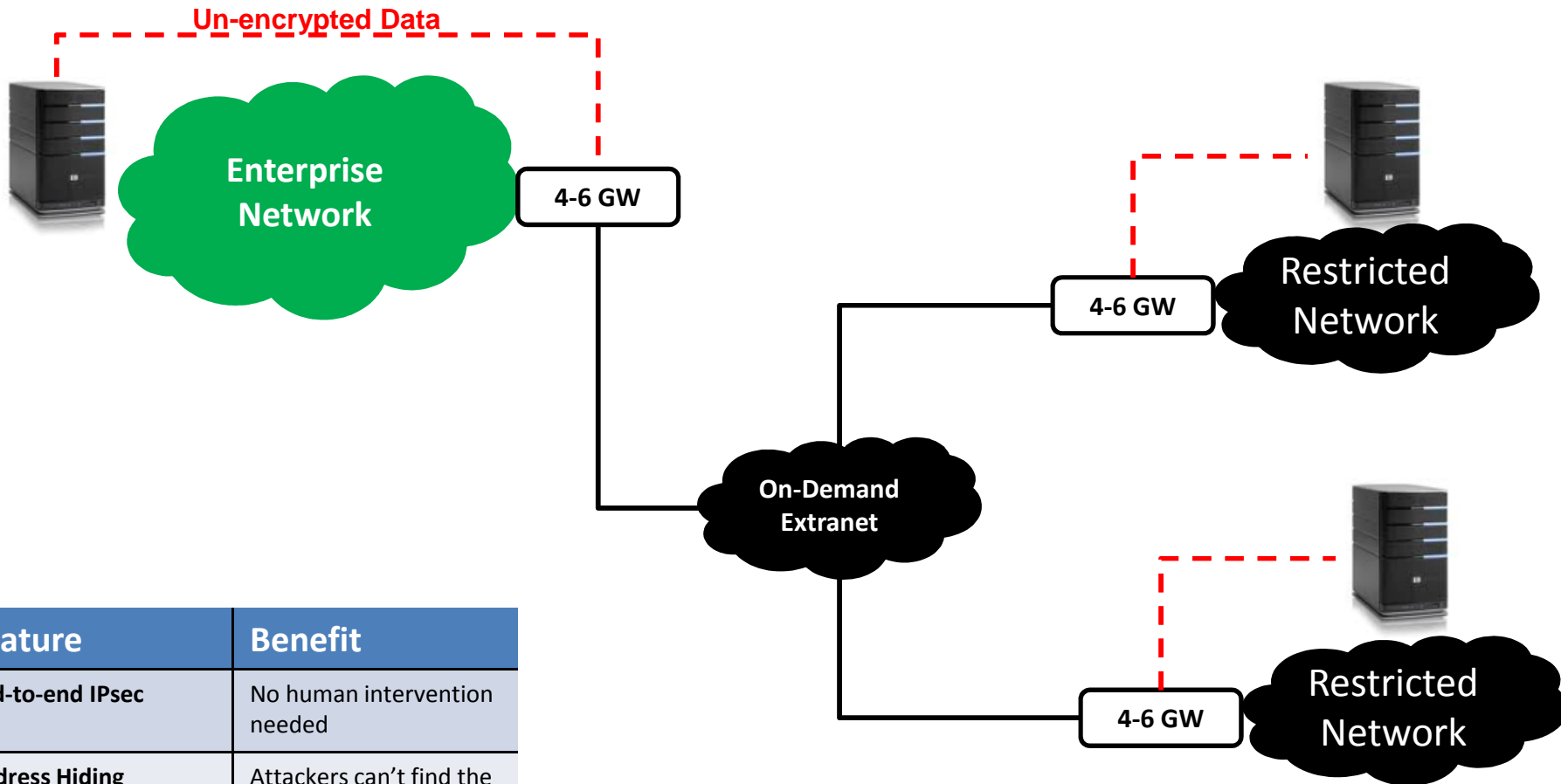


Feature	Benefit
Persistent IP Addressing	No change to application servers
Integrated Encryption	Safe over public networks
Standards-based network interface	Works on any wireless network

Agent-to-Agent VPN: Secure Computing

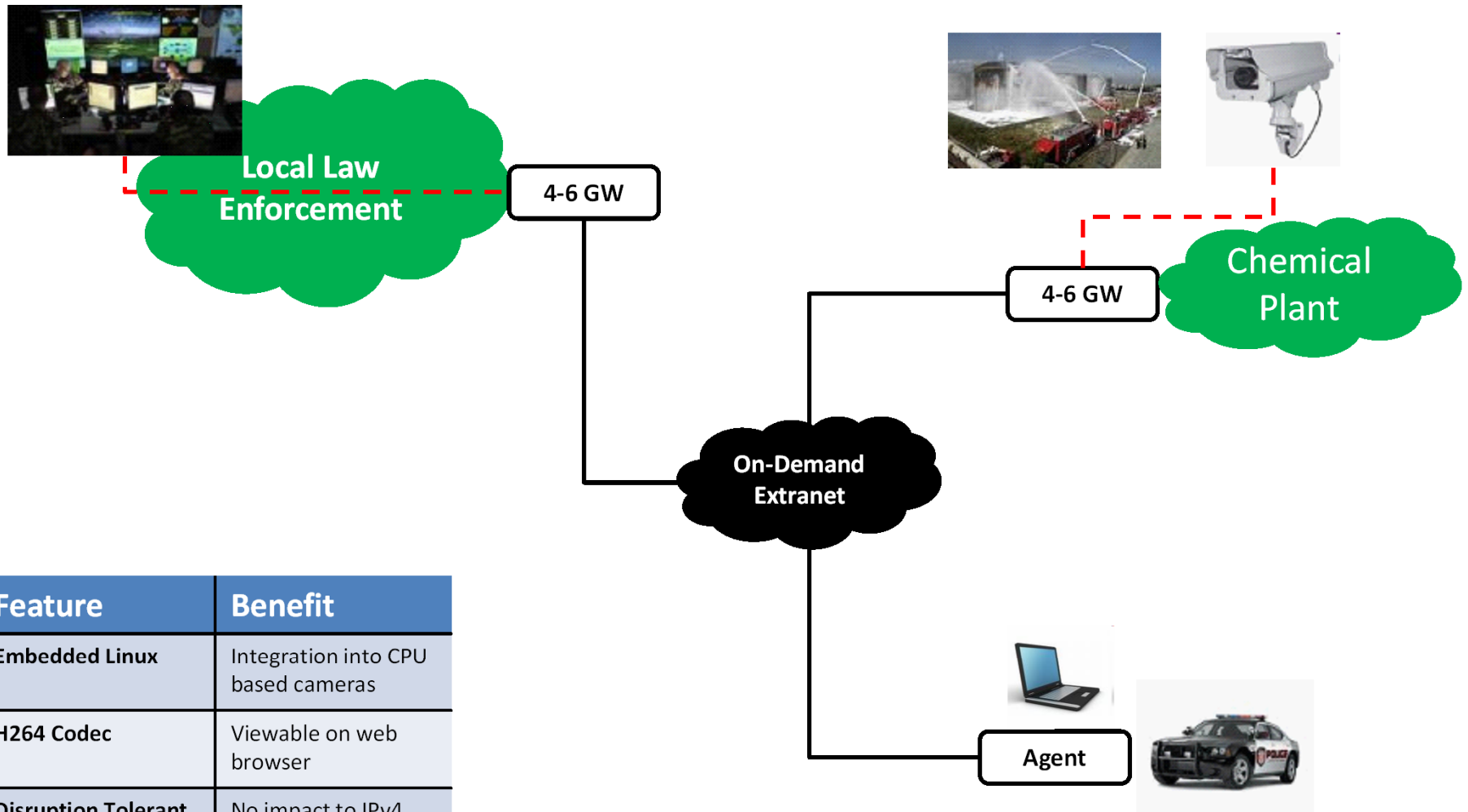


Controller-to-Controller VPN: Inter-Agency Extranet



Feature	Benefit
End-to-end IPsec	No human intervention needed
Address Hiding	Attackers can't find the server to attack it
Disruption Tolerant Networking	Reliably access services even over spotty network connections

Networked Device Support: Camera @ Chemical Plant



Feature	Benefit
Embedded Linux	Integration into CPU based cameras
H264 Codec	Viewable on web browser
Disruption Tolerant Networking	No impact to IPv4 network

IPv6 Value & Business Case: Cost-effective Cross Organizational Collaboration



First Responder
Applications



Networked Device
Connectivity



Inter-Agency
Communications



Mobile Vehicle
Connectivity

Further Reading on IPv6 Overlay Networks

- Fineberg, V., The Role of IPv6 & MLPS in the GIG Black Core, Milcom 2005
- Julie Tarr, Tony DeSimone, Define The GIG Core, Milcom 2007
- Derya Cansever, Carl Williams, Junaid Islam, The Role of Mobile IPv6 in DoD Service Oriented Architectures, Milcom 2007
- Unnamed, GIG Black Core Routing & Addressing Architecture, Slide Presentation, Dow Street OSD NII Feb 2007