インターネット新技術の標準化動向 2016

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2016年 IETF 標準化動向

- この資料を作成していると年末を感じます
  - 体重だけが成長する自分に驚きます
- 以下のエリアから、主な WG を抜き出して動向を説明します
  - Applications & Real-Time Area
  - Routing Area
  - Ops & Mgmt Area
  - Security Area
  - Internet Area
  - Transport Area
  - General Area
  - IRTF (Research Group)

2016年の IETF 開催地と今後

- 95th IETF : Buenos Aires, Argentina
  - IETF初の南米
  - そして人生初の南米
- 96th IETF : Berlin, Germany
- 97th IETF : Seoul, South Korea

- 98th IETF : Chicago, IL, USA
- 99th IETF : Prague, Czech Republic
- 100th IETF : Singapore
  - 記念すべき 100回

Photo Courtesy of Brian Campbell

Applications and Real-Time Area 動向

Applications and Real-Time Area (art) WGs

Group	Name
appsawg	ART Area General Applications Working Group
avtcore	Audio/Video Transport Core Maintenance
avtext	Audio/Video Transport Extensions
bfcpbis	Binary Floor Control Protocol Bis
calext	Calendaring Extensions
capport	Captive Portal Interaction
cdni	Content Delivery Networks Interconnection
cellar	Codec Encoding for LossLess Archiving and Realtime transmission
clue	ControLling mUltiple streams for tElepresence
codec	Internet Wideband Audio Codec
core	Constrained RESTful Environments
dbound	Domain Boundaries
dispatch	Dispatch
dmarc	Domain-based Message Authentication, Reporting & Conformance
ecrit	Emergency Context Resolution with Internet Technologies
geojson	Geographic JSON
httpbis	Hypertext Transfer Protocol
ice	Interactive Connectivity Establishment
insipid	INtermediary-safe SIP session ID
jsonbis	Javascript Object Notation Update
justfont	Font Top Level Media Type
mmusic	Multiparty Multimedia Session Control
modern	Managing, Ordering, Distributing, Exposing, & Registering telephone Numbers
netvc	Internet Video Codec
p2psip	Peer-to-Peer Session Initiation Protocol
payload	Audio/Video Transport Payloads
perc	Privacy Enhanced RTP Conferencing
precis	Preparation and Comparison of Internationalized Strings
regext	Registration Protocols Extensions
rtcweb	Real-Time Communication in WEB-browsers
sipbrandy	SIP Best-practice Recommendations Against Network Dangers to privacY
sipcore	Session Initiation Protocol Core
siprec	SIP Recording
slim	Selection of Language for Internet Media
stir	Secure Telephone Identity Revisited
stox	SIP-TO-XMPP
straw	Sip Traversal Required for Applications to Work
urnbis	Uniform Resource Names, Revised
uta	Using TLS in Applications
webpush	Web-Based Push Notifications
xrblock	Metric Blocks for use with RTCP's Extended Report Framework

Applications and Real-Time Area (art) WGs

- 赤字は Active WG リストから削除された WG

- appswg
- avtcore
- avtext
- bfcpbis
- calext
- cdni
- clue
- codec
- core
- dbound
- dispatch
- dmarc
- ~~drinks~~
- ecrit
- ~~exppext~~
- geojson
- httpbis
- ~~hybi~~
- ice
- ~~imapapnd~~
- insipid
- jsonbis
- lager
- mmusic
- modern
- netvc
- p2psip
- payload
- perc
- precis
- rtcweb
- ~~scim~~
- siprec
- slim
- stir
- stox
- straw
- ~~tzdist~~
- urnbis
- uta
- webpush
- xrblock

rtcweb WG

- Real-Time Communication in WEB-browsers
- 2016年発行 RFC
  - RFC 7742 (was draft-ietf-rtcweb-video)
    WebRTC Video Processing and Codec Requirements
  - RFC 7874 (was draft-ietf-rtcweb-audio)
    WebRTC Audio Codec and Processing Requirements
  - RFC 7875 (was draft-ietf-rtcweb-audio-codecs-for-interop)
    Additional WebRTC Audio Codecs for Interoperability
- WG I-D : 11本
  - rtcweb-overview
  - rtcweb-ip-handling
  - rctweb-data-protocol 等

httpbis

- Hypertext Transfer Protocol
- 2016年発行の RFC
  - RFC 7725 (was draft-ietf-httpbis-legally-restricted-status)
    An HTTP Status Code to Report Legal
  - RFC 7838 (was draft-ietf-httpbis-alt-svc)
    HTTP Alternative Services
- WG I-D : 10本
  - cache-digest
  - client-hints
  - http2-encryption

sipcore WG

- Session Initiation Protocol Core
- IETF95 にて 久しぶりにミーティング開催 (IETF91以来)
- 2016年発行の RFC
  - RFC 7984 (was draft-ietf-sipcore-dns-dual-stack)
    Locating Session Initiation Protocol (SIP) Servers in a Dual-Stack IP Network
- WG I-D : 無し
- 関連 I-D
  - sipcore-dual-stack
  - sipcore-sip-oauth

Routing Area WG 動向

Routing Area (rtg) WGs

Group	Name
babel	Babel routing protocol
bess	BGP Enabled ServiceS
bfd	Bidirectional Forwarding Detection
bier	Bit Indexed Explicit Replication
ccamp	Common Control and Measurement Plane
detnet	Deterministic Networking
i2rs	Interface to the Routing System
idr	Inter-Domain Routing
isis	IS-IS for IP Internets
l2tpext	Layer Two Tunneling Protocol Extensions
lisp	Locator/ID Separation Protocol
manet	Mobile Ad-hoc Networks
mpls	Multiprotocol Label Switching
nvo3	Network Virtualization Overlays
ospf	Open Shortest Path First IGP
pals	Pseudowire And LDP-enabled Services
pce	Path Computation Element
pim	Protocols for IP Multicast
roll	Routing Over Low power and Lossy networks
rtgwg	Routing Area Working Group
sfc	Service Function Chaining
sidr	Secure Inter-Domain Routing
spring	Source Packet Routing in Networking
teas	Traffic Engineering Architecture and Signaling
trill	Transparent Interconnection of Lots of Links

babel WG

- Babel routing protocol
  - Babel is a loop-avoiding, distance vector routing protocol with good provisions for dynamically computed link metrics. The core of the Babel protocol and security extensions are described in Experimental Independent Stream RFCs 6126, 7557, and 7298.
  - いい感じに香ばしいです
- RFC6126 : The Babel Routing Protocol
  - 興味ある方はご一読を
  - Bellman-Ford アルゴリズム
  - Babel has two limitations that make it unsuitable for use in some environments. First, Babel relies on periodic routing table updates rather than using a reliable transport; hence, in large, stable networks it generates more traffic than protocols that only send updates when the network topology changes. In such networks, protocols such as OSPF [OSPF], IS-IS [IS-IS], or the Enhanced Interior Gateway Routing Protocol (EIGRP) [EIGRP] might be more suitable.
- WG I-D : 3本
  - 6126bis
  - applicability

bess WG

- BGP Enabled ServiceS
  - なにげにアツい WG です
  - なぜか？　みんなコントロールプレーンに BGP を使うから
- 2016年発行の RFC : 7本
  - RFC 7814 (was draft-ietf-bess-virtual-subnet)
    Virtual Subnet: A BGP/MPLS IP VPN-Based Subnet Extension Solution
  - RFC 7900 (was draft-ietf-bess-mvpn-extranet)
    Extranet Multicast in BGP/IP MPLS VPNs
- WG I-D : 18本
  - bess-dci-evpn-overlay
  - bess-evpn-overlay
  - bess-evpn-yang
  - bess-service-chaining
  - bess-mvpn-fast-failover

bier WG

- Bit Indexed Explicit Replication
- ドメインのエッジルータがパケットをコピーすることで multicast を実現する仕組み
- 2016年は Interim meeting も開催
- 2016年発行の RFC : 0本
  - 2015年も 0本
  - あれ。。。
- WG I-D : 12本
  - bier-architecture
  - bier-idr-extensions
  - bire-mvpn
- そろそろ成果が出るのかな

ccamp WG

- Common Control and Measurement Plane
  - The CCAMP working group is responsible for standardizing a common control plane and a separate common measurement plane for non-packet technologies found in the Internet and in the networks of telecom service providers (ISPs and SPs). Examples of the devices in such networks include photonic cross-connects, OEO switches, ROADMs, TDM switches, microwave links, and Ethernet switches.
- 2016年発行の RFC
  - RFC 7792 (was draft-ietf-ccamp-flexible-grid-rsvp-te-ext)
    RSVP-TE Signaling Extensions in Support of Flexi-Grid Dense Wavelength Division Multiplexing (DWDM) Networks
  - RFC 7892 (was draft-ietf-ccamp-otn-signal-type-subregistry)
    IANA Allocation Procedures for the GMPLS OTN Signal Type Registry
  - RFC 7963 (was draft-ietf-ccamp-additional-signal-type-g709v3)
    RSVP-TE Extension for Additional Signal Types in G.709 Optical Transport Networks (OTNs)
- WG I-D : 7本
  - ccamp-rsvp-te-bandwidth-availability
  - ccamp-wson-iv-info
  - ccamp-wson-yang

i2rs WG

- Interface to the Routing System
  - たくさん Interim Meeting やってる WG
  - I2RS facilitates real-time or event driven interaction with the routing system through a collection of protocol-based control or management interfaces. These allow information, policies, and operational parameters to be injected into and retrieved (as read or by notification) from the routing system while retaining data consistency and coherency across the routers and routing infrastructure, and among multiple interactions with the routing system.
  - NETCONF とか RESTCONF とか使います
- 2016年発行の RFC : 4本
  - RFC 7920 (was draft-ietf-i2rs-problem-statement)
    Problem Statement for the Interface to the Routing System
  - RFC 7921 (was draft-ietf-i2rs-architecture)
    An Architecture for the Interface to the Routing System
- WG I-D : 12本
  - i2rs-usecase-reqs-smmary
  - i2rs-ephemeral-state

lisp WG

- Locator/ID Separation Protocol
- 2016年発行の RFC : 4本
  - RFC 7835 (was draft-ietf-lisp-threats)
    Locator/ID Separation Protocol (LISP) Threat Analysis
  - RFC 7954 (was draft-ietf-lisp-eid-block)
    Locator/ID Separation Protocol (LISP) Endpoint Identifier (EID) Block
- WG I-D : 8本
  - lisp-crypt
  - lisp-ddt
  - lisp-yang
  - lisp-security
- 基礎スペックのドラフトが RFC となりました
- 神々の遊びみたいになってきました

nvo3 WG

- Network Virtualization Overlays
- 2016年発行の RFC : 0本
- WG I-D : 7本
  - nvo3-arch
  - nvo3-geneve (Generic Network Virtualization Encapsulation)
  - nvo3-gue (Generic UDP Encapuslation)
  - nvo3-vxlan-gpe
- まったりとした雰囲気が流れています
  - でも 1回 Interim Meeting しました
- ここ 2回は OAM の話が中心

pce WG

- Path Computation Element
  - The PCE Working Group is chartered to specify the required protocols so as to enable a Path Computation Element (PCE)-based architecture for the computation of paths for MPLS and GMPLS Point to Point and Point to Multi-point Traffic Engineered LSPs.
- 最近注目されてます
  - セグメントルーティングの流行
  - でも長く続いている WG です
- 2016年発行の RFC
  - RFC 7954 (was draft-ietf-lisp-eid-block)
    Locator/ID Separation Protocol (LISP) Endpoint Identifier (EID) Block
  - RFC 7897 (was draft-ietf-pce-pcep-domain-sequence)
    Domain Subobjects for the Path Computation Element Communication Protocol (PCEP)
- WG I-D : 15本
  - pce-pcep-service-aware
  - pce-segment-routing

sfc WG

- Service Function Chaining
  - The SFC working group will document a new approach to service delivery and operation. It will produce an architecture for service function chaining that includes the necessary protocols or protocol extensions to convey the Service Function Chain and Service Function Path information to nodes that are involved in the implementation of service functions and Service Function Chains, as well as mechanisms for steering traffic through service functions.
- 2016年発行の RFC : 0本
- WG I-D : 5本
  - sfc-control-plane
  - sfc-dc-use-case
  - sfc-nsh
  - sfc-hierachial
- コントロールプレーンの話題とメタデータの話題
- Function の想定

General Area 動向

General Area WG

- ianaplan (終了)
  - Planning for the IANA/NTIA Transition
  - 役目を終えてクローズされました
- mtgvenue (新規)

mtgvenue WG

- Meeting Venue
  - A specification of the venue selection process and criteria would be useful. With community discussion and agreement such a specification will be very helpful in improving the process and ensuring that the relevant criteria are properly identified.
  - ある意味一番アツい WG かもしれません
  - IETF95 で発足
- 2016年発行の RFC : 0本
- WG I-D
  - mtgvenue-iaoc-venue-selection-process
    - Venue City Criteria
    - Lodging Criteria
    - Food and Beverage Criteria

Internet Area 動向

Internet Area (int) WG

Group	Name
6lo	IPv6 over Networks of Resource-constrained Nodes
6man	IPv6 Maintenance
6tisch	IPv6 over the TSCH mode of IEEE 802.15.4e
dhc	Dynamic Host Configuration
dmm	Distributed Mobility Management
dnssd	Extensions for Scalable DNS Service Discovery
dprive	DNS PRIVate Exchange
hip	Host Identity Protocol
homenet	Home Networking
intarea	Internet Area Working Group
ipwave	IP Wireless Access in Vehicular Environments
lpwan	IPv6 over Low Power Wide-Area Networks
lwig	Light-Weight Implementation Guidance
ntp	Network Time Protocol
pcp	Port Control Protocol
savi	Source Address Validation Improvements
softwire	Softwires
sunset4	Sunsetting IPv4
tictoc	Timing over IP Connection and Transfer of Clock

6lo WG

- IPv6 over Networks of Resource-constrained Nodes
  - 6lo focuses on the work that facilitates IPv6 connectivity over constrained node networks with the characteristics of:
    * limited power, memory and processing resources
    * hard upper bounds on state, code space and processing cycles
    * optimization of energy and network bandwidth usage
    * lack of some layer 2 services like complete device connectivity and broadcast/multicast
- 2016年発行の RFC
  - RFC 7973 (was draft-ietf-6lo-ethertype-request)
    Assignment of an Ethertype for IPv6 with Low-Power Wireless Personal Area Network (LoWPAN) Encapsulation
  - RFC 8025 (was draft-ietf-6lo-paging-dispatch)
    IPv6 over Low-Power Wireless Personal Area Network (6LoWPAN) Paging Dispatch
- WG I-D : 8本
  - 6lo-nfc
  - 6lo-ap-nd
  - 6lo-blemesh

6man WG

- IPv6 Maintenance
- 2016年発行 RFC : 3本
  - RFC 8028 (was draft-ietf-6man-multi-homed-host)
    First-Hop Router Selection by Hosts in a Multi-Prefix Network
- WG I-D : 10本
  - 6man-maxra
  - 6man-rdns-rfc6106bis
  - 6man-rfc1981bis (MTU Discovery)
  - 6man-rfc4291bis (IPv6 Specification)
  - 6man-segment-routing-header
- WG の性質から bis 文章が多い
  - IPv6 の細かな不具合を修正
- まだまだ続くと思われます

dnssd WG

- Extensions for Scalable DNS Service Discovery
  - DNS-SD (RFC6763) や mDNS (RFC6762) をより広い範囲で使うための拡張を議論
  - The DNS-SD/mDNS protocol suite is used in many scenarios including home, campus, and enterprise networks. However, the zero configuration mDNS protocol is constrained to link-local multicast scope by design, and therefore cannot be used to discover services on remote links.
- 2016年発行 RFC : 0本
- WG I-D : 5本
  - dnssd-hybrid
  - dnssd-mdns-dns-interop
  - dnssd-privacy
- 毎回ミーティングは開催されている
  - でも色々と遅い感じがする。。。

dprive WG

- DNS PRIVate Exchange
  - The DNS PRIVate Exchange (DPRIVE) Working Group develops mechanisms to provide confidentiality to DNS transactions, to address concerns surrounding pervasive monitoring (RFC 7258).
- 2016年発行 RFC
  - RFC 7830 (was draft-ietf-dprive-edns0-padding)
    The EDNS(0) Padding Option
    EDNS0 の padding によってパケットサイズをランダマイズ
  - RFC 7858 (was draft-ietf-dprive-dns-over-tls)
    Specification for DNS over Transport Layer Security (TLS)
- WG I-D : 2本
  - dprive-dnsodtls (DNS over DTLS)
- DTLS とか TLS とか議論してます
- 実装も一応存在します

ipwave WG

- IP Wireless Access in Vehicular Environments
  - Automobiles and vehicles of all types are increasingly connected to the Internet. Comfort-enhancing entertainment applications, road safety applications using bidirectional data flows, and connected automated driving are some of the new features expected in automobiles to hit the roads from now to year 2020.
- IETF97 にて初のミーティング開催
  - Transmission of IPv6 Packets over IEEE 802.11-OCB (Offset Codebook Mode)
  - Survey on IP-based Vehicular Networking for ITS
  - Problem Statement for Vehicle-to-Infrastructure Networking
  - Security and Privacy Issues in IPWAVE

ntp WG

- Network time Protocol
- 2016年発行 RFC
  - RFC 7821 (was draft-ietf-ntp-checksum-trailer)
    UDP Checksum Complement in the Network Time Protocol (NTP)
  - RFC 7822 (was draft-ietf-ntp-extension-field)
    Network Time Protocol Version 4 (NTPv4) Extension Fields
- WG I-D : 4本
  - ntp-network-time-security
  - ntp-refid-updates
- 2016年は毎回ミーティングを開催
  - Interim Meeting も 3回開催
  - どうした
- nfs と並んで息の長い WG

Operations and Management Area 動向

Operation and Management Area (ops) WGs

Group	Name
anima	Autonomic Networking Integrated Model and Approach
bmwg	Benchmarking Methodology
dime	Diameter Maintenance and Extensions
dnsop	Domain Name System Operations
grow	Global Routing Operations
l2sm	L2VPN Service Model
lime	Layer Independent OAM Management in the Multi-Layer Environment
lmap	Large-Scale Measurement of Broadband Performance
mboned	MBONE Deployment
netconf	Network Configuration
netmod	NETCONF Data Modeling Language
opsawg	Operations and Management Area Working Group
opsec	Operational Security Capabilities for IP Network Infrastructure
radext	RADIUS EXTensions
sidrops	SIDR Operations
supa	Simplified Use of Policy Abstractions
v6ops	IPv6 Operations

Operations and Management Area WGs

- anima
- bmwg
- dime
- dnsop
- grow
- ~~l3sm~~
- lime
- lmap
- mboned
- netconf
- netmod
- opsawg
- opsec
- radext
- supa
- v6ops

anima WG

- Autonomic Networking Integrated Model and Approach
  - This WG will develop a system of autonomic functions that carry out the intentions of the network operator without the need for detailed low-level management of individual devices. This will be done by providing a secure closed-loop interaction mechanism whereby network elements cooperate directly to satisfy management intent.
- 2016年発行の RFC : 0本
- WG I-D : 6本
  - anima-autonomic-control-plane
  - anima-bootstrapping-keyinfra
  - anima-grasp (generic autonomic signaling protocol)
  - anima-prefix-management
- IETF91 が初回の会合でありそれから毎回会合
  - 今回も Signaling や Bootstrapping、Control Plane が議論された

bmwg

- Benchmarking Methodology
  - 様々なプロトコルやシステムの性能計測手法を提案する WG
  - The Benchmarking Methodology Working Group (BMWG) will continue to produce a series of recommendations concerning the key performance characteristics of internetworking technologies, or benchmarks for network devices, systems, and services.
- 2016年発行の RFC
  - RFC 7747 (was draft-ietf-bmwg-bgp-basic-convergence)
    Basic BGP Convergence Benchmarking Methodology for Data-Plane Convergence
- WG I-D : 6本
  - bmwg-ipv6-nd
  - bmwg-sdn-controller-mebchmark-meth
  - bmwg-vswitch-opnfv
- 2016年のミーティング
  - SDN とか VNF とかいうキーワードがちらほら
  - Virtual Switch とかも
  - EVPN とか PBB-EVPN も

dnsop WG

- Domain Name System Operations
  - DNS 運用のガイドラインや運用のためのプロトコルを提案するWG
- 2016年発行の RFC : 9本
  - そんなに出たんだ
  - RFC 7873 (was draft-ietf-dnsop-cookies)
    Domain Name System (DNS) Cookies
  - RFC 7828 (was draft-ietf-dnsop-edns-tcp-keepalive)
    The edns-tcp-keepalive EDNS0 Option
  - RFC 7766 (was draft-ietf-dnsop-5966bis)
    DNS Transport over TCP - Implementation Requirements
- WG I-D : 14本
  - dnsop-dns-wireformat-http
  - dnsop-ip6rdns
  - dnsop-refuse-any
  - dnsop-resolver-priming
- 6man と一緒で DNS の不具合を解消
- DNS 専用パケットキャプチャフォーマットの話題も

grow WG

- Global Routing Operations
  - BGP の運用に関連することを扱う WG
- 2016年発行の RFC : 5本
  - RFC 7854 (was draft-ietf-grow-bmp)
    BGP Monitoring Protocol (BMP)
  - RFC 7948 (was draft-ietf-grow-ix-bgp-route-server-operations)
    Internet Exchange BGP Route Server Operations
  - RFC 7999 (was draft-ietf-grow-blackholing)
    BLACKHOLE Community
- WG I-D
  - grow-bgp-reject
  - grow-mrt-add-paths (MRT Export Format with BGP Additional Path Extensions)
- ほぼ毎回ミーティングは開催されている
  - しかしミーティングではあまり多くのことは議論されない
  - なのに RFC や I-D は出ている？　わりと不思議

l2sm WG

- L2VPN Service Model
  - The IETF and the industry in general is currently specifying a set of YANG models for network element and protocol configuration. This is an essential first step, but the end goal is a full system configuration that enables service agility to speed service creation and delivery and allows the deployment of innovative new services across networks. Services are built from a combination of network element and protocol configuration, but are specified to service users in more abstract terms.
  - YANG model っすね
- IETF97 で初会合
- 一方 l3sm WG は終了
  - ietf-l3sm-l3vpn-service-model (161page !) が RFC になりそう

netconf WG

- Network Configuration
  - The NETCONF protocol (RFC 6241) provides mechanisms to install, manipulate, and delete the configuration of network devices.
- 2016年発行の RFC
  - RFC 7895 (was draft-ietf-netconf-yang-library)
    YANG Module Library
- WG I-D : 13本
  - netconf-client-server
  - netconf-event-notifications
  - netconf-restconf
  - netconf-ssh-client-server
  - netconf-yang-push
- YANG model が一段落した感じはします

opsawg

- Operations and Management Area WG
  - 既存の WG に当てはまらないプロトコルを扱う WG
- 2016年に発行された RFC
  - RFC 7860 (was draft-ietf-opsawg-hmac-sha-2-usm-snmp-new)
    HMAC-SHA-2 Authentication Protocols in User-Based Security Model (USM) for SNMPv3
- WG I-D : 3本
  - opsawg-capwap-alt-tunnel
  - opsawg-tacacs
- 2016年はわりとまったりした感じでした
  - 毎回ミーティングは開催されていましたが
  - IPFIX や OAM の話題

sidrops WG

- SIDR Operations
  - The global deployment of SIDR, consisting of RPKI, Origin Validation of BGP announcements, and BGPSEC, is underway, creating an Internet Routing System consisting of SIDR-aware and non-SIDR-aware networks. This deployment must be properly handled to avoid the division of the Internet into separate networks. Sidrops is responsible for encouraging deployment of theSIDR technologies while ensuring as secure of a global routing system, as possible, during the transition.
  - The SIDR Operations Working Group (sidrops) develops guidelines for the operation of SIDR-aware networks, and provides operational guidance on how to deploy and operate SIDR technologies in existing and new networks.
- 2016/11/07 に WG として発足
  - まだ一度もミーティングを開催していない

Security Area 動向

Security Area (sec) WGs

Group	Name
ace	Authentication and Authorization for Constrained Environments
acme	Automated Certificate Management Environment
curdle	CURves, Deprecating and a Little more Encryption
dane	DNS-based Authentication of Named Entities
dots	DDoS Open Threat Signaling
httpauth	Hypertext Transfer Protocol Authentication
i2nsf	Interface to Network Security Functions
ipsecme	IP Security Maintenance and Extensions
kitten	Common Authentication Technology Next Generation
lamps	Limited Additional Mechanisms for PKIX and SMIME
mile	Managed Incident Lightweight Exchange
oauth	Web Authorization Protocol
openpgp	Open Specification for Pretty Good Privacy
sacm	Security Automation and Continuous Monitoring
secevent	Security Events
tls	Transport Layer Security
tokbind	Token Binding
trans	Public Notary Transparency

Security Area WGs

- ~~abfab~~
- ace
- acme
- ~~cose~~
- dane
- ~~dice~~
- dots
- httpauth
- i2nsf
- ipsecme
- ~~jose~~
- kitten
- mile
- oauth
- openpgp
- sacm
- tls
- tokbind
- trans

curdle WG

- CURves, Deprecating and a Little more Encryption
  - The CURDLE working group is chartered to add a small set of cryptographic mechanisms to some IETF protocols, and to make implementation requirements including deprecation of old algorithms where there is IETF consensus to do so. The focus with regards to adding mechanisms is for those mechanisms that enjoy broad support from implementers.
- WG I-D : 9本
  - curdle-dnskey-eddsa (EdDSA for DNSSEC)
  - curdle-pkix
  - curdle-rsa-sha2 (SSH)
- IETF95 から毎回ミーティングを開催
  - DNSSEC、PKIX、SSH 等で使われる暗号化アルゴリズムを対象

dane WG

- DNS-based Authentication of Named Entities
  - The DANE working group has developed a framework for securely retrieving keying information from the DNS [RFC6698]
- 2016年発行 RFC
  - RFC 7929 (was draft-ietf-dane-openpgpkey)
    DNS-Based Authentication of Named Entities (DANE) Bindings for OpenPGP
- WG I-D
  - dane-smime
- 今までの RFC
  - DANE for SMTP TLS
  - DANE for TLS
- 実装もいくつか存在
- 2016年は IETF95 のみミーティングを開催

dots WG

- DDoS Open Threat Signaling
  - The aim of DDoS Open Threat Signaling (DOTS) is to develop a standards based approach for the realtime signaling of DDoS related telemetry andthreat handling requests and data between elements concerned with DDoS attack detection, classification, traceback, and mitigation.
- WG I-D
  - dots-architecture
  - dots-requirements
  - dots-use-cases
- 2015年6月に WG
  - それからは毎回ミーティング開催
  - 2016年は Interim Meeting を 2回開催
- Use Case や Requirement をまだ定めている
  - それによって利用するプロトコルが変わる
  - プロトコルの候補が複数提案された

i2nsf WG

- Interface to Network Security Functions
  - The goal of I2NSF is to define a set of software interfaces and data models for controlling and monitoring aspects of physical and virtual NSFs (Network Security Functions), enabling clients to specify rule sets.
- 2015年9月に WG として発足
- IETF97 では hackathon でのチームが目立っていた
- WG I-D : 5本
  - i2nsf-framework
  - i2nsf-problem-and-use-cases
  - i2nsf-terminology
  - まだわりと基礎的な I-D

lamps WG

- Limited Additional Mechanisms for PKIX and SMIME
  - The PKIX and S/MIME Working Groups have been closed for some time. Some updates have been proposed to the X.509 certificate documents produced by the PKIX Working Group and the electronic mail security documents produced by the S/MIME Working Group.
  - なるほど
- 2016/07/01 に発足
  - IETF96, IETF97 にてミーティング開催
- WG I-D : 3本
  - lamps-eai-address (Internationalized Email Address in X.509)
  - lamps-rfc5751-bis (S/MIME Ver4.0 Message Specification)

mile WG

- Managed Incident Lightweight Exchange
  - The MILE WG is focused on two areas: IODEF, the data format and extensions to represent incident and indicator data, and RID, the policy and transport for structured data.
- 2016年発行 RFC
  - RFC 7970 (was draft-ietf-mile-rfc5070-bis)
    The Incident Object Description Exchange Format Version 2
- WG I-D : 4本
  - mile-implementreport
  - mile-iodef-guidance
- その必要性は理解できるけど
  - 実用となるのだろうか
- 毎回ミーティングは開催している

secevent WG

- Security Events
  - Many HTTP web services and APIs depend on a web security infrastructure that:
    * identifies security subjects and regulates their access to services
    * and provides profile and rights information to applications.
  - The Security Events working group will produce a standards-track Event Token specification that includes:
    - A JWT extension for expressing security events
    - A syntax that enables event-specific data to be conveyed
    This Event Token specification will be event transport independent.
- Web アプリケーションのセキュリティイベントトークンの扱いを定める？
  - セキュリティイベントの Web アプリへの伝え方
  - Feed Type とか Feed Metadata とか
  - SCIM の利用

Transport Area 動向

Transport Area (tsv) WGs

Group	Name
alto	Application-Layer Traffic Optimization
aqm	Active Queue Management and Packet Scheduling
dtn	Delay/Disruption Tolerant Networking
ippm	IP Performance Metrics
mptcp	Multipath TCP
nfsv4	Network File System Version 4
quic	QUIC
rmcat	RTP Media Congestion Avoidance Techniques
taps	Transport Services
tcpinc	TCP Increased Security
tcpm	TCP Maintenance and Minor Extensions
tram	TURN Revised and Modernized
tsvwg	Transport Area Working Group

Transport Area WGs

- alto
- aqm
- ~~conex~~
- dtn
- ippm
- mptcp
- nfsv4
- ~~ppsp~~
- rmcat
- ~~storm~~
- taps
- tcpinc
- tcpm
- tram
- tsvwg

mptcp WG

- Multipath TCP
  - マルチパス TCP の仕様を提案する WG
- 2016年発行の RFC : 0本
- WG I-D
  - mptcp-experience
  - mptcp-rfc6824bis
- IETF86 から毎回ミーティングを開催
  - 2016年は Interim Meeting を 1回
  - Load-Balancing の手法について

nfsv4 WG

- Network File System Version 4
  - NFS Version 4 is the IETF standard for file sharing. To maintain NFS Version 4's utility and currency, the working group is chartered to maintain the existing NFSv4, NFSv4.1, Federated Namespace, and related specifications. The working group will also consider a new NFSv4 minor version in the form of NFSv4.2 and supporting protocols. Finally, deployment guidance will be collected for deployments of the NFSv4 FedFS implementations and their interaction with integration with new user authentication models.
- 2016年発行の RFC : 5本
  - RFC 7861 (was draft-ietf-nfsv4-rpcsec-gssv3)
    Remote Procedure Call (RPC) Security Version 3
  - RFC 7931 (was draft-ietf-nfsv4-rfc3530-migration-update)
    NFSv4.0 Migration: Specification Update
- WG I-D : 8本
  - nfsv4-rfc5567bis (RPC-over-RDMA)
  - nfsv4-scsi-layout (Parallel NFS SCSI Layout)
- いつも少人数なイメージが。。。

quic WG

- QUIC
  - The QUIC working group will provide a standards-track specification for a UDP-based, stream-multiplexing, encrypted transport protocol, based on pre-standardization implementation and deployment experience, and generalizing the design.
- 2016/10/04 に WG として発足
  - IETF96, IETF97 にてミーティング開催
  - 来年1月に Interim Meeting を開催 @ Akamai 東京
- WG I-D : 4本
  - quic-http
  - quic-recovery (Loss Detection and Congestion Control)
  - quic-tls

IRTF RG

- 実は IRTF RG が面白い
- これから WG になったりするものも
  - 同様に BoF も面白い

Group	Name
cfrg	Crypto Forum
gaia	Global Access to the Internet for All
hrpc	Human Rights Protocol Considerations
iccrg	Internet Congestion Control
icnrg	Information-Centric Networking
maprg	Measurement and Analysis for Protocols
nfvrg	Network Function Virtualization
nmrg	Network Management
nmlrg	Proposed Network Machine Learning
nwcrg	Network Coding
sdnrg	Software Defined Networking
t2trg	Thing-to-Thing

以上
毎度せわしなくてすみません