Introduction to the Applications Area within the IETF

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Overview

- What's the area about?
- How we relate to other IETF areas
- Primary topic areas
- Applications Area Directorate
- Active working groups

What is the area about?

- Deals with user applications space
  - Things that are not the network
  - Things that are not security protocols
    - But there are exceptions (e.g., UTA)
  - Things that are not highly time-sensitive ("real time")
  - Things that are not IETF procedure

How we relate to other areas
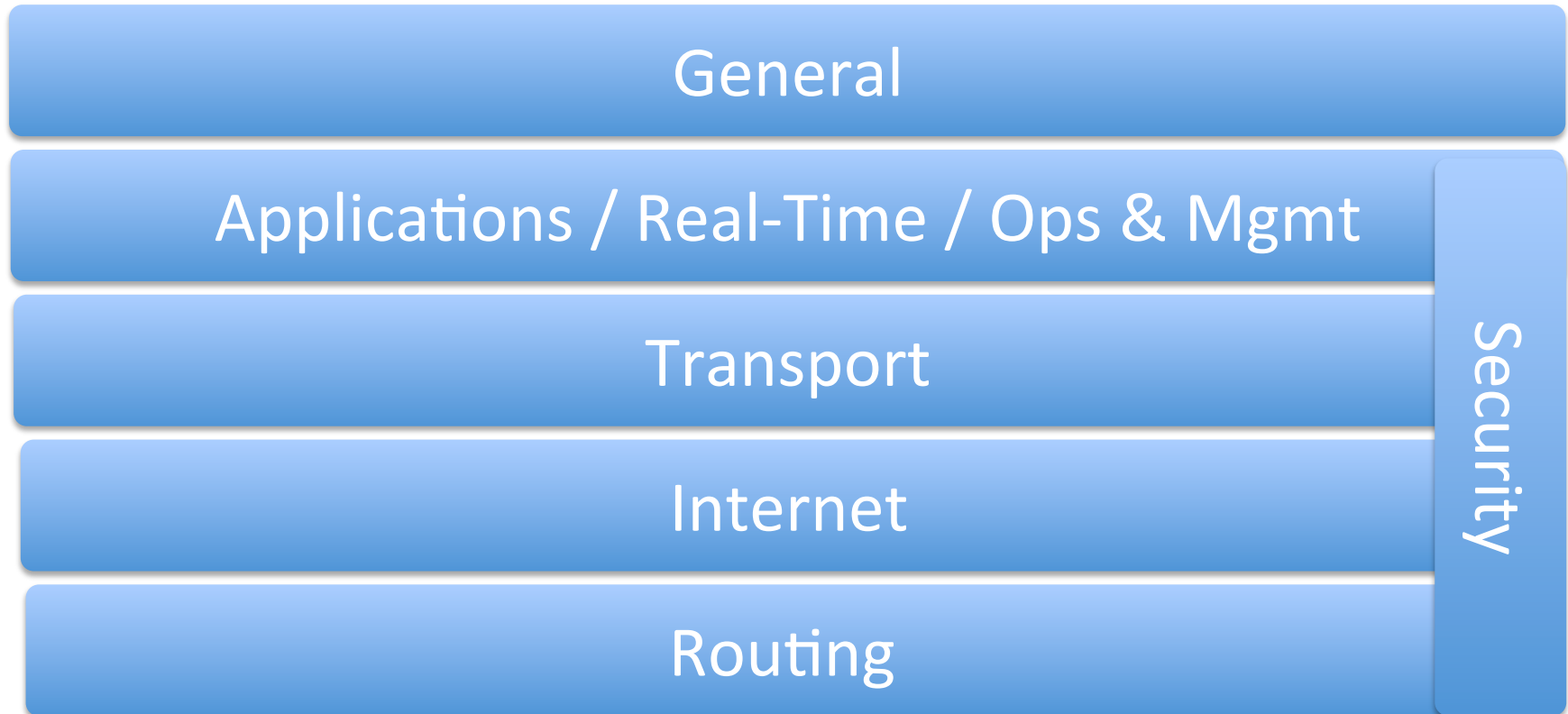
How we relate to other areas

- Very carefully
- General (GEN)
  - Usually IETF procedural work, not technical
  - Changes to process affect how we operate
- Operations & Management (OPS)
  - Protocols for monitoring and reporting on service and network health
  - Some overlap, since they also sit atop the network, but their audience is admins rather than users

How we relate to other areas

- Internet (INT)
  - IP and IPv6 live here
  - Sometimes DNS lives here, and APPS stuff uses the DNS quite a bit
- Transport (TSV)
  - TCP and UDP live here

How we relate to other areas

- Routing (RTG)
  - BGP, etc. live here
- Real-Time Applications (RAI)
  - Some stuff that's technically applications space
  - But theirs is all very time-sensitive, e.g., VoIP (SIP), instant messaging (XMPP)
- Security (SEC)
  - Any protocol that relates to ensuring security of data in transit
  - Encryption and authentication

How we relate to other areas

- Overlaps occur
  - Sometimes it's not clear into which area a particular piece of new work ought to fall
  - APPSAWG is a good place to get a glimpse of new work being initiated in other areas

Primary topic areas

- Email
  - SMTP, STARTTLS, IMAP/POP, sieve
  - MIME, header fields
  - Authentication
  - Reputation
  - Internationalization
  - Abuse reporting
- The Web
  - HTTP
  - HTML
  - URI schemes

Primary topic areas

- Contacts & Calendars
  - vCard & iCalendar
- Data representations
  - JSON and XML
  - Internationalization
  - Language Tags
- File transfer
  - FTP
- Registration and directory services
  - LDAP
  - WHOIS
  - EPP

Primary topic areas

- Application-level registries
  - IANA stuff
  - MIBs
- Other stuff
  - Fax over Internet
  - Usenet/NNTP
  - telnet

Applications Area Directorate

- A team of people with broad APP experience who volunteer to review documents coming up for publication
  - Selected pseudo-randomly to review things when requested by an AD or WG Chair
  - Professional experience and expertise are taken into consideration when selecting
  - As an aid to the Area Directors
  - Many documents from outside our area could benefit from some APP "clue"
  - Volunteering is a great way to become more involved and improve the quality of our output

WG Overview: APPSAWG

- Applications Area Working Group
  - Small projects that don't warrant their own working groups can be handled here
  - Area Directors don't always like to sponsor things
  - Colocated with Applications Area general meeting
  - BoF and new WG overviews are sometimes popular

WG Overview: CORE

- Constrained Restful Environments
- A binary protocol which is easy to implement for constrained devices (such as sensors) and that maps naturally to a subset of HTTP

    - The main protocol is complete:

        - draft-ietf-core-coap-- Constrained Application Protocol (CoAP)

        - RFC 6690 - Constrained RESTful Environments (CoRE) Link Format

    - The WG is working on extensions, like draft-ietf-core-block (transferring of large payloads), draft-ietf-core-observe (Observing Resources in CoAP), etc.

WG Overview: EPPEXT

- Extensible Provisioning Protocol Extensions
- Standard 69 (RFCs 5730, 5731, 5732, 5733, and 5734) used for provisioning of Domain name registries

  – draft-ietf-eppext-reg - Extension Registry for EPP

  – draft-ietf-eppext-idnmap - Internationalized Domain Name Mapping Extension for EPP

  – draft-ietf-eppext-keyrelay - Key - Relay Mapping for EPP

  – draft-ietf-eppext-launchphase - Launch Phase Mapping for EPP

  – draft-ietf-eppext-tmch-smd - Mark and Signed Mark Objects Mapping

WG Overview: HTTPBIS

- Update to HTTP/1.1 and design of HTTP/2.0

    - HTTP/1.1 (draft-ietf-httpbis-p*, draft-ietf-httpbis-authscheme-registrations and draft-ietf-httpbis-method-registrations) were approved for publication!

    - Work on HTTP/2.0 (new "transport mapping" for HTTP) continues at a very good speed:

        - draft-ietf-httpbis-http2

        - Draft-ietf-httpbis-header-compression

            - Major topics: discovery of HTTP/2.0 service (e.g. draft-nottingham-httpbis-alt-svc), priority dependencies, tweaks to header compression algorithms

WG Overview: HYBI

- BiDirectional or Server-Initiated HTTP
  - RFC 6455 - The WebSocket Protocol

  - draft-ietf-hybi-permessage-compression - Compression Extensions for WebSocket

  - There was a workitem for multiplexing extension, but it looks like people want to work on WebSockets over HTTP/2.0 which provides comparable functionality

  - A straw poll on the mailing list about updating WebSockets to prohibit per-frame extensions

WG Overview: JCARDCAL

- Works on how to represent iCalendar and vCard formats in JSON format

- RFC 7095 - jCard: The JSON Format for vCard

- draft-ietf-jcardcal-jcal - jCal: The JSON format for iCalendar

  - In IESG review

WG Overview: JSON

- Javascript Object Notation
  - Making minor updates to JSON and changing its status (Informational to Proposed Standard)

WG Overview: PAWS

- Protocol to Access WS database
  - Determine in real time if there's available radio spectrum
  - Access databases containing this information
  - Define protocols for such access
  - Appropriate security provisions

WG Overview: PRECIS

- Preparation and Comparison of Internationalized Strings
- For example how to compare usernames, passwords, filenames, nicknames

  - RFC 6885 - Stringprep Revision and Problem Statement for the Preparation and Comparison of Internationalized Strings (PRECIS)

  - draft-ietf-precis-framework - PRECIS Framework: Preparation and Comparison of Internationalized Strings in Application Protocols

  - draft-ietf-precis-mappings - Mapping characters for PRECIS classes

  - draft-ietf-precis-nickname - Preparation and Comparison of Nicknames

  - draft-ietf-precis-saslprepbis - Preparation and Comparison of Internationalized Strings Representing Usernames and Passwords

WG Overview: SCIM

- System for Cross-domain Identity Management
  - User identity management in applications, across domains
  - Schema and protocol specifications

WG Overview: URNBIS

- Uniform Resource Names, Revised
  - RFC 2141 (URN Syntax)
    - draft-ietf-urnbis-rfc2141bis-urn
  - RFC 3406 (Namespace Definition Mechanisms)
    - draft-ietf-urnbis-rfc3406bis-urn-ns-reg
  - RFC 3187 (URN Namespace for International Standard Book Numbers)
  - RFC 3188 (URN Namespace for National Bibliography Numbers)
  - RFC 3044 (URN Namespace for International Serial Standard Number)
    - Uniform Resource Name (URN) Namespace Registration Transition (draft-ietf-urnbis-ns-reg-transition)

WG Overview: UTA

- Using TLS in Applications
- The WG is tasked with specify best current practices for using TLS in email (SMTP/IMAP/POP), XMPP and HTTP. In particular

  - Recommended versions of TLS to use

  - Recommended ciphers

  - How to verify TLS server certificates

  - Possible extensions for "opportunistic TLS" (use TLS if advertised, even if not explicitly requested by the user)

- First meeting in London, deciding on documents to work on in the WG

WG Overview: WEBSEC

- Works on Web Security – specifications that document web security model and a list of extensions for improving web security

    - RFC 6454 - The Web Origin Concept (December 2011)

    - RFC 6797 - HTTP Strict Transport Security (HSTS) (November 2012)

    - RFC 7034 - HTTP Header Field X-Frame-Options (October 2013)

    - draft-ietf-websec-key-pinning - Public Key Pinning Extension for HTTP

    - Discussion about possibly designing a new secure HTTP Cookie mechanism

WG Overview: WEIRDS

- Developing an HTTP-based replacement for the venerable WHOIS protocol
  - Query syntax, reply syntax
  - Security considerations
  - How to do redirections
  - How to bootstrap a query
  - Internationalization

BoF Overview: ACE

- Authentication and access control of devices in an "Internet of Things" context
  - IoT refers to the idea of having various devices and objects become part of the Internet in terms of being able to determine status or location, and possibly providing or exchanging other interesting data
  - Container monitoring, home automation, personal health monitoring, building automation, industrial control systems

BoF Overview: DBOUND

- How to find a domain boundary
  - Given any fully qualified domain name, what's the domain of authority?
  - Consider: ietf.org, www.ietf.org, foobar.msk.org.uk
  - Useful for finding policy information that might be stored in the DNS
  - Useful for aggregating history
  - The Public Suffix List just won't cut it

Questions & Answers?

- Thanks for coming!
- Please provide feedback on this session!