

# Data Types

RADEXT - IETF 90

# Data Types

- RADIUS has data types
  - Sort of. *Maybe.*
- Explicitly named and defined in 2865
  - text, string, address, integer, time
- Used in dictionaries since Livingston 1.0
  - `ATTRIBUTE User-Name 1 text`

# What's missing

- No other RFC named and defined data types
- 3162 “Address” is IPv6
- 2869 Event-Timestamp is time, but not “date”
- 6572 defines IPv4 prefix, but not as a data type
  - And doesn't refer to 6158.
- 6929 defines multiple data types, and names them.

# What this means

- All implementations uses data types
- Pretty much no specification does.
  - Oops.
- We have ASCII art instead of saying “Foo-Bar is an attribute with code 257, and is of type ‘integer’.  
It is now fully specified.”

# What do to about it

- Define the data types in new document
- Demand that all new standards
  - use existing data types
  - explicitly define new ones
- Changes two things:
  - IANA registry
  - ASCII art in specifications

# New Registry

- RADIUS Data types
  - Value - integer, only for IANA tracking
  - Description - name (disambiguated)
  - Reference (RFC, etc.)
- e.g. “1, integer, RFC 2865”

# Change Attribute Registry

- Add “data type” column
- Reference to “Description” field of RADIUS data type registry
- e.g. “1, User-Name, text, RFC 2865”

# Benefits

- It now becomes possible to generate RADIUS dictionaries directly from the IANA registry
- Data types are explicitly named and controlled
- Data types have their formats explicitly given
- Specifications can now avoid ASCII art
  - Which is difficult to create when we have multiple assignment points

# Downsides

- None?

# Next Steps

- Accept as WG document
- Publish as Standards Track
- Start using data types in new specifications

Discussion?