

RADIUS Extensions for IP Port Configuration and Reporting

draft-ietf-radext-ip-port-radius-ext-03

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Draft Status

- **Adopted as a WG document in May 2014**
- **00.txt was posted on May 9 2014 (based on individual draft).**
- **Comments received on mailing list since London meeting**
- **01.txt was posted on June 12 2014 with significant changes incorporating most of the comments including:**
 - **Defined one TLV for each data field.**
 - **Changed to allow multiple instances for all proposed attributes.**
 - **Defined mandatory and optional TLVs within each proposed attribute.**
- **0.3 txt posted on February 6 2015**
 - **Defined mapping between RADIUS TLV types and IPFIX Elements**

Proposed Radius Attributes

- **IP-Port-Limit Attribute**

- To configure the max number of IP ports associated with a specific or all IPv4 address for an IP service subscriber.

- **IP-Port-Range Attribute**

- To report to the Radius server that a range IP ports that have been allocated or de-allocated associated with a specific IPv4 address for an IP

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- ~~IP-Port-Limit Attribute~~ To configure the max number of IP ports associated with a specific or all IPv4 address for an IP service subscriber.

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Extended Type & Embedded TLVs

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Type:

TBA1 - Extended-Type-1 (241), Extended-Type-2 (242), Extended-Type-3 (243), or Extended-Type-4 (244) per [RFC6929].

Length:

This field indicates the total length in bytes of all fields this attribute, including the Type, Length, Extended-Type, and the

Extended-Type:

TBA2.

Value:

Embedded TLVs

Proposed Radius TLVs

IP-Port-Type TLV

- To specify one or more specific IP transport port types.

IP-Port-Limit TLV

- To specify the max number of IP ports to be assigned to a user.

IP-Port-Ext-IPv4-Addr TLV

- To specify the external IPv4 address for a port device.

IP-Port-Int-IPv4-Addr TLV

- To specify the internal IPv4 address for a port device.

IP-Port-Int-IPv6-Addr TLV

- To specify the internal IPv6 address for a port device.

IP-Port-Int-Port TLV

- To specify an internal IP port of a port device.

IP-Port-Ext-Port TLV

- To specify an external IP port of a port device.

IP-Port-Alloc TLV

- To specify either allocation or de-allocation of IP ports.

IP-Port-Range-Start TLV

- To specify the largest port number of a contiguous IP port range.

IP-Port-Range-End TLV

- To specify the smallest port number of a contiguous IP port range.

IP-Port-Local-Id TLV

- To specify a customer-local significant identifier (e.g., a MAC address).

Identifiers of the three Attributes

- **IP-Port-Limit Attribute**

- Type.Extended-Type.IP-Port-Type TLV.

- [IP-Port-Limit TLV, {IP-Port-Ext-IPv4-Addr TLV }].

- **IP-Port-Range Attribute**

- Type.Extended-Type.IP-Port-Type TLV.

- [IP-Port-Alloc TLV, {IP-Port-Range-Start TLV, IP-Port-Range-End TLV}, {IP-Port-Ext-IPv4-Addr TLV}, {IP-Port-Local-Id TLV}].

- **IP-Port-Forwarding-Map Attribute**

- Type.Extended-Type.IP-Port-Type TLV.

- [IP-Port-Int-Port TLV, IP-Port-Ext-Port TLV,

- {IP-Port-Int-IPv4-Addr TLV | IP-Port-Int-IPv6-Addr TLV},

- {IP-Port-Ext-IPv4-Addr TLV}].

Attributes and Embedded TLVs

	Attribute	Attribute	Attribute
IP-Port-Type TLV	M	M	M
IP-Port-Limit TLV	M	n/a	n/a
IP-Port-Ext-IPv4-Addr TLV	O ⁿ¹	O	O
IP-Port-Int-IPv4-Addr TLV	n/a	n/a	M ⁿ³
IP-Port-Int-IPv6-Addr TLV	n/a	n/a	M ⁿ³
IP-Port-Int-Port TLV	n/a	n/a	M
IP-Port-Ext-Port TLV	n/a	n/a	M
IP-Port-Alloc TLV	n/a	M	n/a
IP-Port-Range-Start TLV	n/a	M ⁿ²	n/a
IP-Port-Range-End TLV	n/a	M ⁿ²	n/a
IP-Port-Local-Id TLV	n/a	O	M ⁿ³

n1: If not included, the port limit as specified in IP-Port-Limit TLV applied to all IPv4 addresses. If included, the port limit as specified in IP-Port-Limit TLV applied to all IPv4 addresses.

n2: For port allocation, these two TLVs are mandatory.

For port de-allocation, if these two TLVs are present, all ports are de-allocated. If not present, all ports are de-allocated.

n3: Either IP-Port-Int-IPv4-Addr/IP-Port-Int-IPv6-Addr TLV or

IP-Port-Ext-IPv4-Addr/IP-Port-Ext-IPv6-Addr TLV or

RADIUS TLV Type & IPFIX Mapping

(8-bits)	http://www.iana.org/assignments/ipfix/ipfix.xhtml
IP-Port-Type TLV	(proposed)
TLV	(proposed)
TLV	postNATSourceIPv4Address (225)
TLV	sourceIPv4Address (8)
TLV	sourceIPv6Address (27)
IP-Port-Int-Port TLV	(7)
IP-Port-Ext-Port TLV	(227)
IP-Port-Alloc TLV	(230)
IP-Port-Range-Start TLV	(361)
IP-Port-Range-End TLV	(362)
IP-Port-Local-Id TLV	(proposed)

IANA Considerations for RADIUS TLVs

Name	Reference	Value
Type Field	Section 3.1.1	TBA1
Extended Field	Section 3.1.1	TBA2
IP-Port-Type TLV	Section 3.2.1	TBA3 : 1 : TCP/UDP port & ICMP identifier 2: TCP/UDP port 3: TCP port 4: UDP port 5: ICMP identifier
IP-Port-Limit TLV	Section 3.2.2	TBA4
IP-Port-Ext-IPv4-Addr TLV	Section 3.2.3	TBA5
IP-Port-Int-IPv4-Addr TLV	Section 3.2.4	TBA6
IP-Port-Int-IPv6-Addr TLV	Section 3.2.5	TBA7
IP-Port-Int-Port TLV	Section 3.2.6	TBA8
IP-Port-Ext-Port TLV	Section 3.2.7	TBA9
IP-Port-Alloc TLV	Section 3.2.8	TBA10
IP-Port-Range-Start TLV	Section 3.2.9	TBA11
IP-Port-Range-End TLV	Section 3.2.10	TBA12
IP-Port-Local-Id TLV	Section 3.2.11	TBA13

IANA Considerations for IPFIX

Name	Reference	Value
transportType	Section 3.2.1	Unsigned8 1:TCP/UDP port & ICMP identifier 2:TCP/UDP port 3:TCP port 4:UDP port 5:ICMP identifier
natTransportLimit	Section 3.1.2	Unsigned16
localID	Section 3.2.11	String

Next Step - WGLC

- **The draft has addressed all comments received (meetings & ML)**
- **The draft is stable**