A syntax for the RADIUS Connect-Info attribute used in Wi-Fi networks

https://datatracker.ietf.org/doc/draft-grayson-connectinfo/

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Background

- Presented Draft-00 at IETF 121 – <u>LINK</u> and Draft-01 at IETF 122 - <u>LINK</u>

- IETF 121 covered background, motivation, alignment with existing implementations, proposed ABNF syntax, example encodings.

- IETF 122 addressed Drfat-00 feedback and described implementation across 17,0000 Access points and requested feedback on RADEXT WG adoption.

- Feedback at IETF 122 was for authors to progress draft via the Independent Submissions Editor route.

- Draft has since been revised, according to feedback from ISE-editor.

- 2025-09-11 RADEXT WG placed draft in state "Candidate for WG adoption"

Email feedback for Candidate for WG adoption

	Feedback	Comment
1	Support	This specification has been implemented and is in use, so it should be published. However, I think it should be informational, as it violates the RFC6158 prohibitions against using complex data types.
2	Support	In one scenario, the syntax defined in the draft gets adopted by the Wi-Fi community such that capabilities become widely available across different use-cases and deployments.
3	Support	
4	Support	This seems like the perfect home to find consensus on building upon RADIUS.
5	Support	Connect-Info for Wi-Fi access allows the industry to converge on a standardized approach for the characterization of the access network and signaling the same to the IDP, for greater visibility at the identity provider (aka AAA in RADIUS terms). I also agree with recommendation to put this on Informational track.
6	Support	I also support these two drafts for adoption by the WG. They are both, IMO, in reasonable shape for WG review and refinement.
7	Support	These drafts are essential for end-to-end solution and deployment. I would also be willing to review the 'connectinfo' draft.
8	Support	
9	Support	I support adoption of the both drafts.
10	Support	I support the adoption of both drafts by the WG.

Email Feedback on Specific Metrics/RADEXT Call for Adoption

I don't have an issue with use of Connect-Info to provide text of negotiated or provisioned data rates and protocol for the connection.

Separately I think signal metrics (CU/NF/SNR/RSSI..etc) are useful and note there are existing VSAs and no shortage of operators currently pulling this data OOB of RADIUS. Having standard attributes to convey this information would be useful.

However, metrics reflect current environmental conditions rather than nature of the connection. This does not seem like a good fit for Connect-Info.

Email Feedback on Specific Metrics/hostap thread

The high level use case makes sense to me, but the way this is described feels more like this draft is describing historical information on how some vendors have implemented this than a clean design that could be conveniently supported in future devices.

All the non-STA-specific items like channel/operating class (i.e., identification of an operating channel), noise level, channel utilization, backhaul link throughput/latency, and STA count on the radio should be kept separate and each of those would be in their own VSA anyway so this confusing combination of them with per-STA information in a single string attribute would be avoided.

Planning for WG adoption

- As has been highlighted, WG adoption means ensuring rough consensus, versus a WBA specific Independent Submissions Editor route.

- Seems rough consensus that, as this has been implemented and is in use, there is support for the idea of formalizing a connect-info syntax, with appropriate health warnings that original RFC 2869 recommendation and implementations use complex data types.

- Seems agreement that key-value pairs can be classified into 802.11 connection specific, 802.11 connection generic and IP connection generic.

- Seems agreement that a single RADIUS attribute cannot convey all key-value pairs and hence a key WG task, if adopted, is to define what is in connect-info, versus other RADIUS attributes.

Classification of KV pairs into 802.11 STA connection specific, 802.11/IP connection generic.

802.11 STA Connection Specific

- RSSI

- Tx Bit Rate

- Rx Bit Rate

- Frame Loss

- Frame Retry

802.11/IP Connection Generic

- Connection Speed

  Current implementations
  of connect-info
  include these
  connection generic
  attributes

- Wi-Fi Amendment

- Wi-Fi Channel

- Wi-Fi Global Operating Class

- RSSI Minimum

- 802.11 Noise Level

- 802.11 Channel utilization

- WAN RTT

Moving forward

① Agreed set of per-STA key-value pairs ➡ Connect-Info RADEXT WG Informational RFC defining complex datatype syntax. Refine per-STA definitions according to feedback. How to deal with legacy signaling of speed, amendment and channel?

Address by calling out separate "legacy" usage section in draft?

② Agreed set of STA-agnostic key-value pairs ➡ New RADEXT WG Informational RFC defining set of attributes. Does this necessitate using vendor specific attribute space?

Feedback requested on approach