Managing Credentials via EAP-CREDS

https://datatracker.ietf.org/doc/draft-pala-eap-creds/

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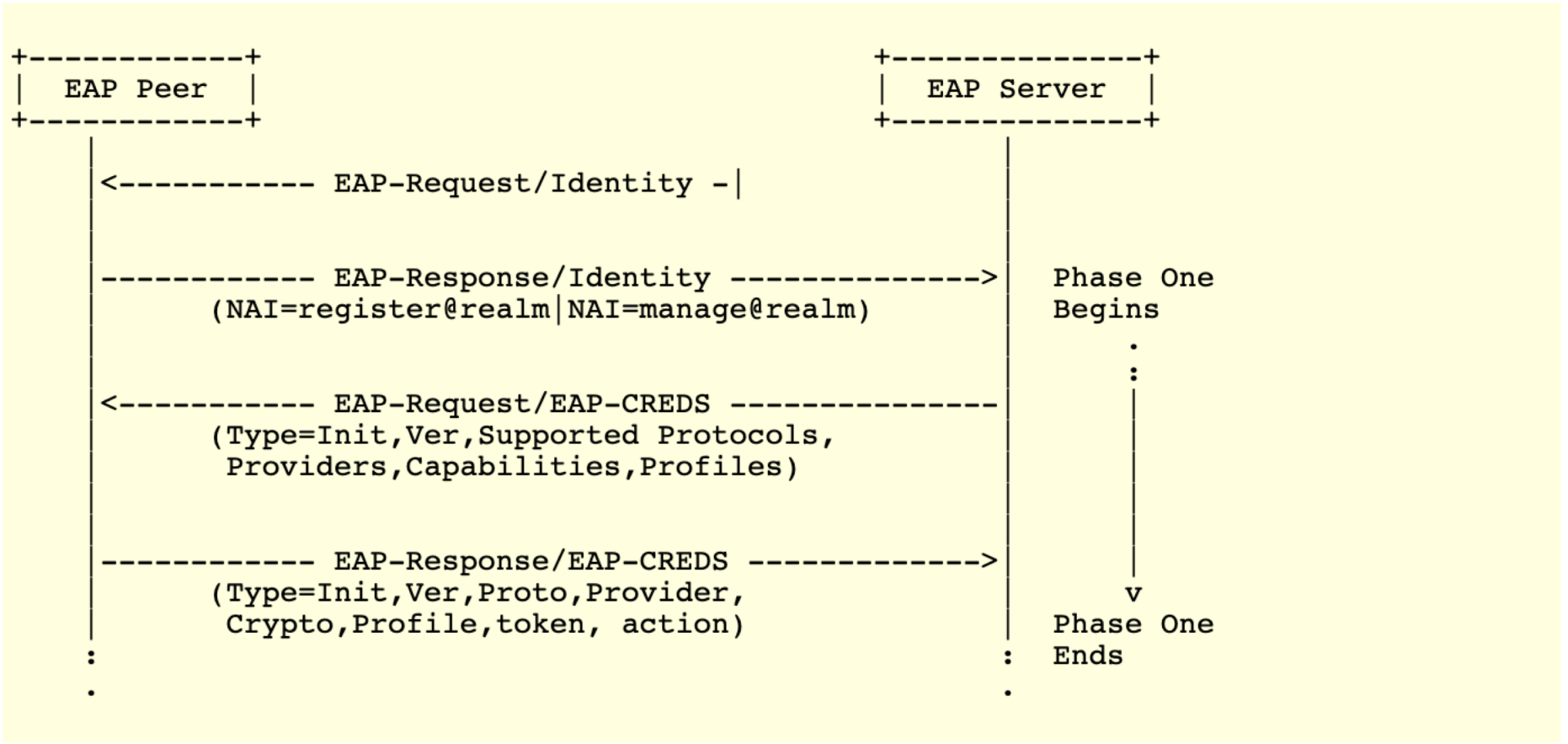
The Problem

- Access network authenticates users and devices by using different types of credentials
- Securely managing these credentials is critical for the security of the access networks
  - No easy method exists to manage these credentials
  - Some methods provide some form of credentials management for X.509 certificates, but do not handle generic credentials
- By providing an EAP generic method, we can enable network management tools to actively register, deploy, and update credentials even before providing IP connectivity

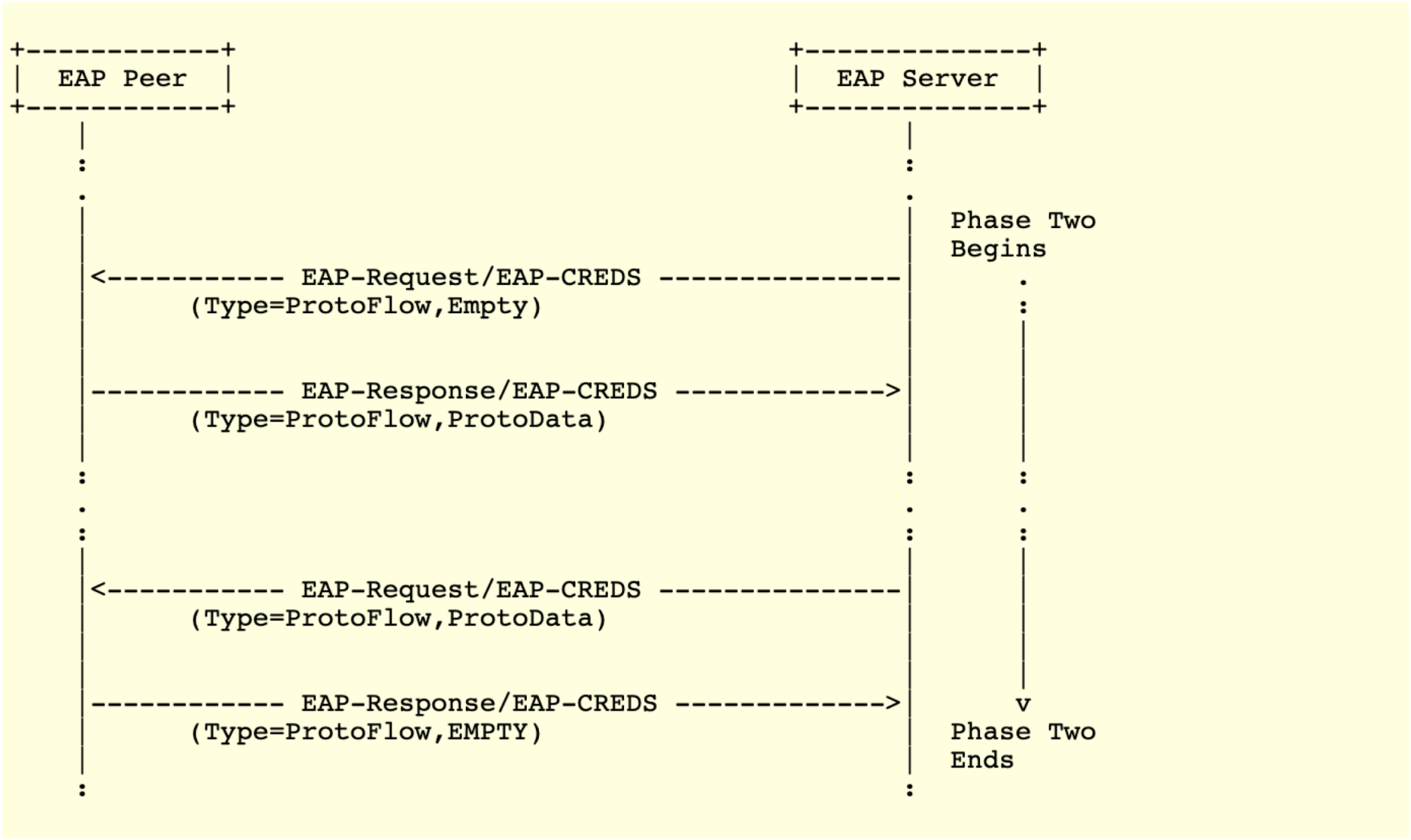
EAP-CREDS in a Nutshell

- The protocol is organized in three different phases: initialization, management, and validation.
- The Initialization phase allows the server and the client to exchange the details about the supported EAP-CREDS version, available management/provisioning protocols.
- The Management phase provides the transport messages for the selected management protocol (e.g., CMP, EST, ACME, etc.)
  - A simple EAP-CREDS specific protocol is also to be defined for managing non-certificates credentials (i.e., OTT, Passwords, Reusable Tokens, etc.)
- The validation phase provides (optional) the possibility to verify the correct installation of the credentials

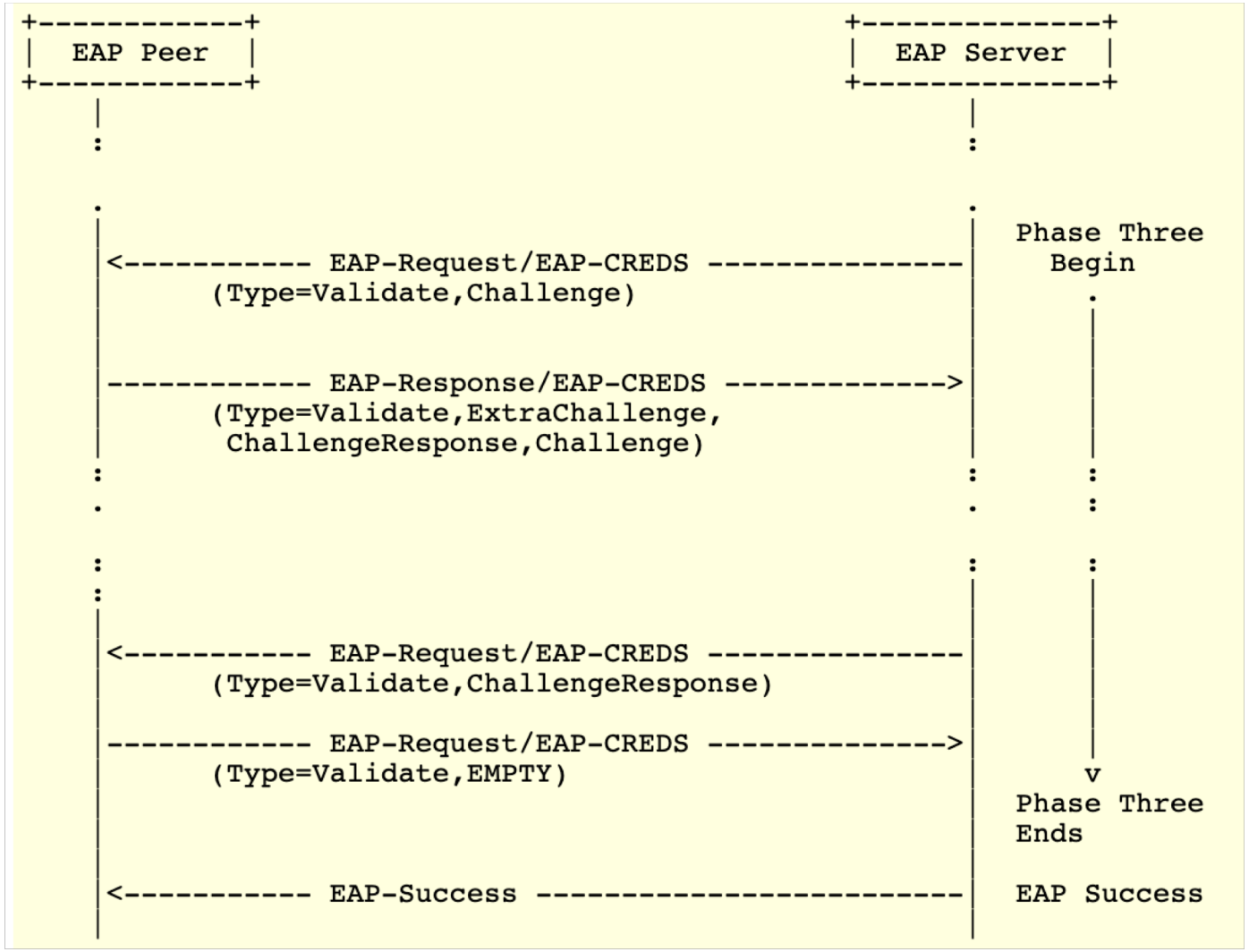
Phase One: Initialization



Phase Two: Credentials Management



Phase Three: Validation



Remaining Work

- **Simplify the proposal.** The current version of the draft assumes that EAP-CREDS should provide support for fragmentation control, and allows its use in non-tunneled mode
  - By requiring EAP-CREDS to be used together with a tunneling method that provides server-side authentication, encryption, and fragmentation support (e.g., EAP-TEAP, EAP-TLS/EAP-TTLS, etc.) the method's implementation can be simplified and additional control messages can be spared.
- **Provide a generic method for managing non-certificate credentials.** Access networks use many different types of credentials: a generic method might be needed for managing these types of credentials (e.g., OTT, username/passwords, Reusable Tokens, etc.)

Next Steps

- We would like to see the proposal, at some point, to be adopted by the WG, however we do not ask for adoption at this time
  - we realize that a re-chartering is needed
  - we realize that this effort might take resources away from the current efforts

- We would appreciate feedback on the current approach, though.
  - Should we provide an authentication mechanism instead of requiring a tunneling method to be used first ?
  - Should we define the EAP-CREDS credentials management in the document or shall we define it in a different document (should we define it at all ?)

EMU WG

- To get a sense of the WG toward the proposal, would the WG like to work on this type of EAP method ?
- If there is interest, would it be possible to start working on the text for the charter to include the development of a method for credentials management ?