SWID Message and Attributes for PA-TNC

draft-coffin-sacm-nea-swid-patnc-00

https://datatracker.ietf.org/doc/draft-coffin-sacm-nea-swid-patnc/

SACM WG Meeting – IETF 95

April 6, 2016

Agenda

- Overview
- Role in SACM
- Questions and Open Issues
- Next Steps

Overview

- Standardizes reporting of endpoint software inventory information
- Uses SWID tag (ISO/IEC 19770-2:2015)[1] information
- Utilizes NEA (RFC 5209)[2] PA-TNC (RFC 5792)[3] for messaging
- Capabilities
  - Report full inventories or targeted inventories (only report items of interest)
  - Report inventories or list of change events (deltas)
  - Can identify software using full SWID tag or just the unique tag identifier
  - Supports demand-driven (pull) and event-driven (push) delivery

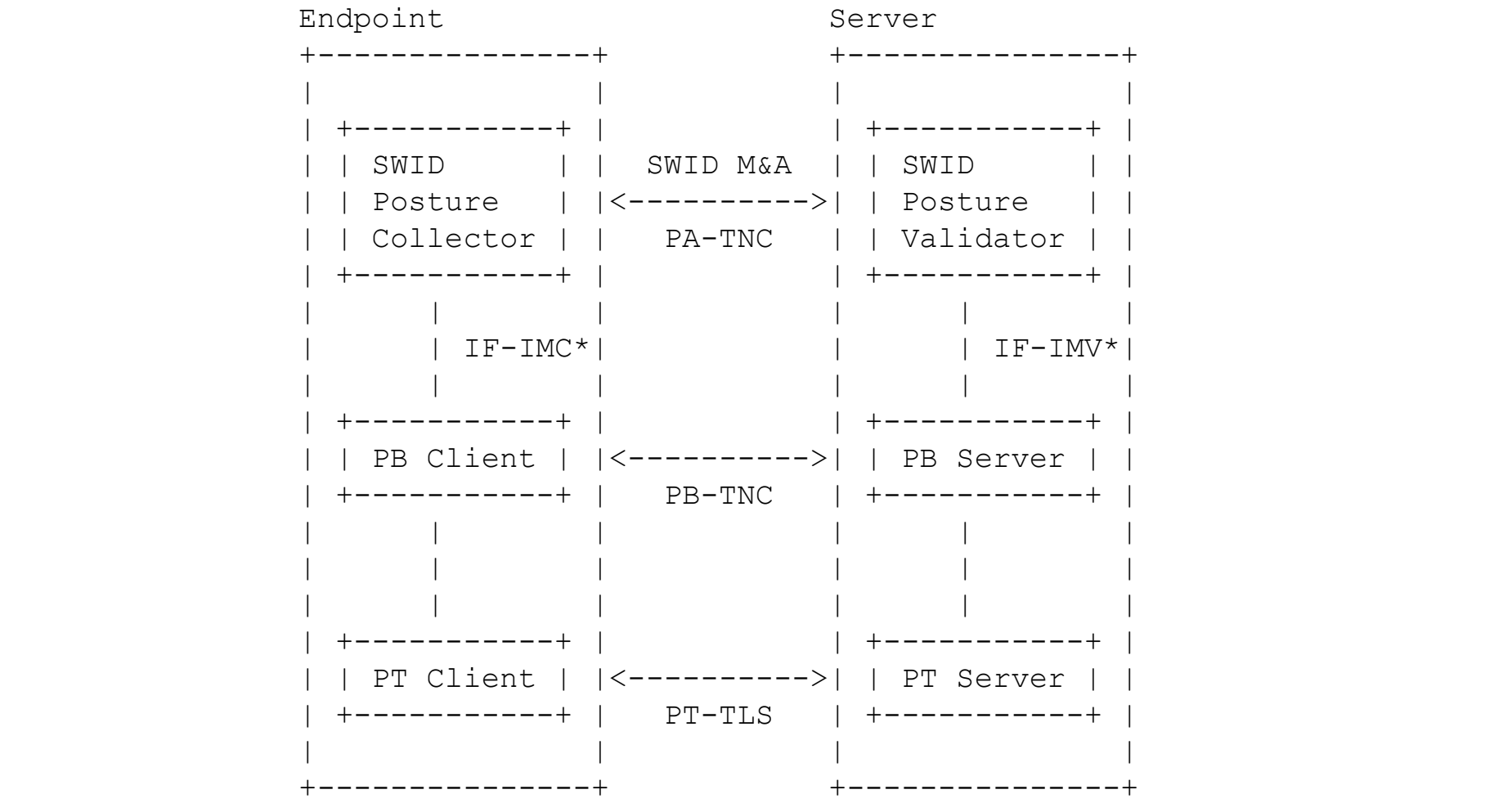
1. http://www.iso.org/iso/catalogue_detail.htm?csnumber=65666
2. https://datatracker.ietf.org/doc/rfc5209/
3. https://datatracker.ietf.org/doc/rfc5792/

Role in SACM

- Endpoint Identification and Assessment Planning use case (section 2.1.2 of Endpoint Security Posture Assessment: Enterprise Use Cases[1])
  - Help understand software inventory of endpoints
  - Can direct further assessment/actions based on vulnerabilities present, application-specific policy, etc.
- Endpoint Posture Attribute Value Collection use case (section 2.1.3 of Endpoint Security Posture Assessment: Enterprise Use Cases[1])
  - Provides details about endpoint software inventory
  - Can produce real-time updates as this inventory changes
- An endpoint's collected SWID tags can be used by other security tools to make further assessments without additional contact with the endpoint

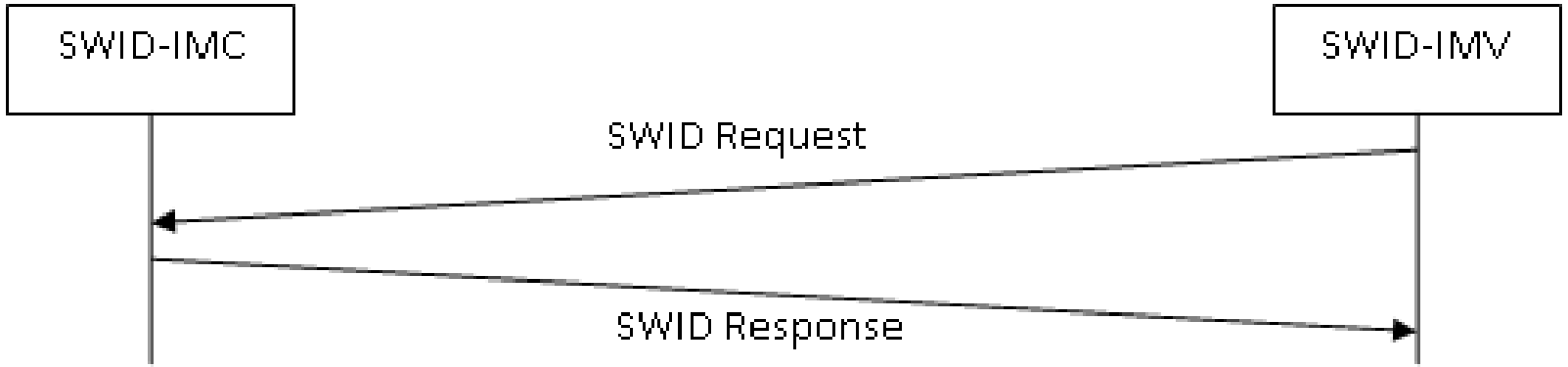
1. https://datatracker.ietf.org/doc/rfc7632/

SWID M&A in the NEA Architecture



* Not currently part of NEA, but part of the compatible TNC architecture

SWID M&A Message Flows: Demand-Driven (Pull)



- 4 types of Response attributes depending on Request parameters
  - SWID Tag Inventory – Complete or targeted inventory expressed in SWID tags
  - SWID Tag Identifier Inventory – Complete or targeted inventory using tag IDs
  - SWID Tag Events – Changes since a given event number using in SWID tags
  - SWID Tag Identifier Events – Changes since a event number using tag IDs

Change Tracking in SWID M&A

- Posture Collectors MUST monitor their SWID tag collection for changes
  - Can be real-time or periodic monitoring
- Each change is assigned a unique, sequential “event number”
- All event numbers have an associated “event epoch”
- Within an epoch, event numbers fully order all change events
- All inventories are reported along with the event number and epoch of the last recorded event at time of inventory
  - Given this and a list of subsequent events, can track all changes just using deltas
  - Epoch changes represent discontinuities – no way to track across

SWID M&A Message Flows: Event-Driven (Push)

Issue 1: Removal of IF-IMV/IF-IMC references

- SWID M&A includes normative references to IF-IMC[1] & IF-IMV[2]
  - TNC standards that we plan to (and have TCG permission to) submit to SACM but have not yet finished the conversion
  - Given the current document load on SACM, we are thinking of delaying submission
- IF-IMC & IF-IMV references detail use of specific functions to collect unique identifiers for Posture Collectors (IMCs) and Posture Validators (IMVs) (in addition to endpoint IDs)
- Unique IDs for Posture Collectors and Posture Validators are provided in PB-TNC messages[3]
  - Can just say these IDs SHOULD be recorded and used when possible
  - Only difference is that we no longer name specific functions by which these IDs get from the PB to the PA layer of NEA

1. http://www.trustedcomputinggroup.org/resources/tnc_ifimc_specification
2. http://www.trustedcomputinggroup.org/resources/tnc_ifimv_specification
3. https://datatracker.ietf.org/doc/rfc5793/

Issue 2: Support for SWID 2009

- There are two versions of the SWID standard: 2009 and 2015
  - Currently SWID M&A supports both
- Could drop the requirement to support 2009 SWID tags
  - Simplifies procedure for collecting unique SWID identifiers (one method instead of multiple)
  - Removes the need to monitor and report changes to tags (2015 tags cannot be edited – only replaced)
  - Simplifies interoperability since recipients only need to parse one type of tag
- Downside: Lose support for existing 2009 tags, but those should be a small minority in the near future

Issue 3: Report SWID tag versions

- There can be revisions of tags, tracked by the tagVersion field
  - A tag can be revised to fix errors and to add new metadata
  - Tag Identifiers are the same for all revisions of a tag (Unique tag identifiers correspond to the associated software product, not to the tag itself)
- Currently, when reporting tag identifiers SWID M&A doesn't mention version
  - Tag identifiers for different versions of the same tag look the same
- Is there a need to track new versions of a tag?

Issue 4: Denoting Tag Bindings

- Assuming multiple tag bindings are supported (regardless of whether one or more are MTI)…
- Currently SWID M&A does not identify the binding of contained tags
- Is it important to identify the binding of a tag in the message?
  - If so, what is the best way to do so?
  - What about multiple bindings in the same exchange?

Issue 5: MTI Tag Bindings

- The ISO SWID specification defines a normative XML schema for SWIDs
  - However, other bindings are possible. See recent I-D for a CBOR SWID binding (draft-birkholz-sacm-coswid-00)[1]
- Should there be an MTI binding for SWID tags (XML? CBOR? JSON?)
  - If so, should that be specified in SWID M&A?
    - Currently, SWID M&A is agnostic to the bindings it conveys?
  - Or, should the MTI SWID binding be identified in a higher-level spec? (E.g., the ECP?)

1. https://datatracker.ietf.org/doc/draft-birkholz-sacm-coswid/

Next Steps

- Would like to adopt the SWID messaging concept as a WG draft
  - Continue to work on this draft within the working group
- Identify other people (beyond current authors) who can provide input/feedback
  - We need more review
  - Could also use help with authoring the draft
- Ultimately would like to see this published as a standards-track RFC