January 2019
Version 1
Peter Elmer

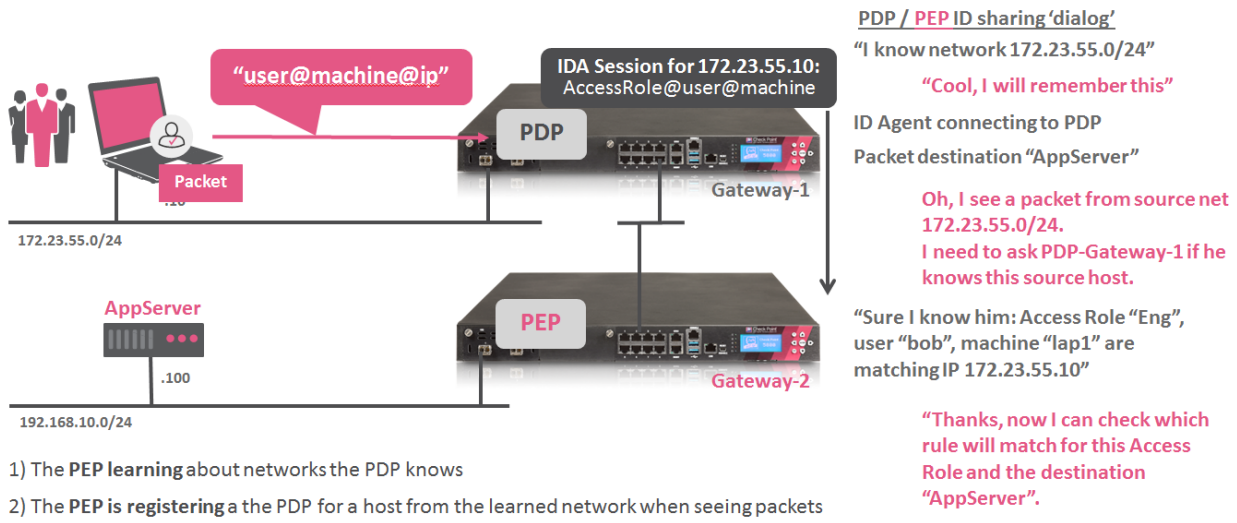
Details about Identity Sharing

This document outlines some details about Identity Sharing mechanism between the Policy Decision Point (PDP) and Policy Enforcement Point (PEP):

The PEP gateway registers on the PDP gateway asking the list of networks this PDP may have identities for. The PDP sends a list of networks to the PEP gateway in the registration process. The PDP gateway will perform the group membership query once a login event is observed and calculate the Access Role object matching. It will then create an Identity Awareness Session related to the source IP address.

In case a packet sourced by one of the networks learned from the PDP will arrive on the PEP gateway the PEP gateway will query the PDP for the current identities related to this source IP address.

The PDP will provide the relevant Access Role and the PEP will perform the rule base matching allowing or blocking the packet accordingly.

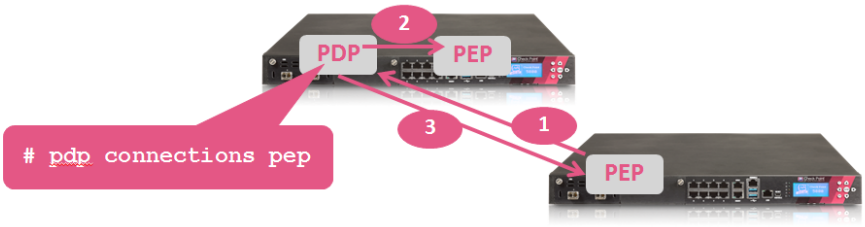


1) The **PEP learning** about networks the PDP knows
2) The **PEP is registering** a the PDP for a host from the learned network when seeing packets

Monitoring Identity Sharing from PDP to PEP

Understand the list of PEP(s) the PDP has a sharing relationship with.

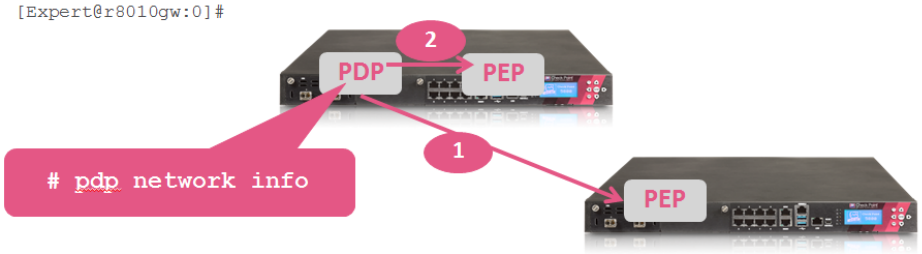
```
[Expert@r8010gw:0]# pdp connections pep
-----------------------------------------------------------------------------------------------------
| Direction | IP            | Port  | Name           | Type           | Status    | Location | IPv6 Supported |
-----------------------------------------------------------------------------------------------------
| Incoming  | 172.23.55.190 | 28581 | R80.10-External | Single Gateway | Connected | Remote   | No             |
-----------------------------------------------------------------------------------------------------
| Outgoing  | 127.0.0.1     | 15105 | R80.10-Gateway  | Single Gateway | Connected | Locally  | No             |
-----------------------------------------------------------------------------------------------------
| Outgoing  | 172.23.55.190 | 15105 | R80.10-External | Single Gateway | Connected | Remote   | No             |
-----------------------------------------------------------------------------------------------------
```



Understand the list of networks the PDP knows about

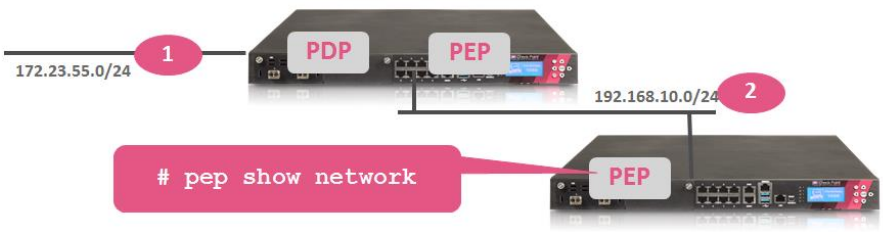
```
[Expert@r8010gw:0]# pdp network info
-----------------------------------------------------------------------------------------------------------------
| Network      | Mask          | Creation Time             | Last update time          | Last updating IP |
-----------------------------------------------------------------------------------------------------------------
| 172.23.55.0  | 255.255.255.0 | Sun Jul  8 16:36:22 2018 | Sun Jul 15 15:57:28 2018 | 172.23.55.190    |
-----------------------------------------------------------------------------------------------------------------
| 192.168.10.0 | 255.255.255.0 | Sun Jul  8 16:36:11 2018 | Sun Jul 15 15:57:34 2018 | 192.168.10.100   |
-----------------------------------------------------------------------------------------------------------------
```

```
[Expert@r8010gw:0]#
```



Understand the list of networks the PEP has been made aware of by the PDP

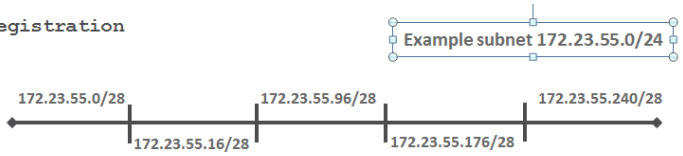
```
Expert@R80.10-External:0]# pep show network pdp
-----------------------------------------------------
| Network      | Mask          | Related PDPs       |
-----------------------------------------------------
| 172.23.55.0  | 255.255.255.0 | <192.168.10.11,0>; |
-----------------------------------------------------
| 192.168.10.0 | 255.255.255.0 | <192.168.10.11,0>; |
-----------------------------------------------------
```



Understand the list of networks the PEP has performed a registration process for

```
[Expert@R80.10-External:0]# pep show network registration
-----------------------------------
| Network        | Mask            |
-----------------------------------
| 172.23.55.0    | 255.255.255.240 |
-----------------------------------
| 192.168.10.0   | 255.255.255.240 |
-----------------------------------
| 172.23.55.96   | 255.255.255.240 |
-----------------------------------
| 192.168.10.96  | 255.255.255.240 |
-----------------------------------
| 172.23.55.176  | 255.255.255.240 |
-----------------------------------
| 172.23.55.16   | 255.255.255.240 |
-----------------------------------
| 172.23.55.240  | 255.255.255.240 |
-----------------------------------

[Expert@R80.10-External:0]#
```



Larger networks are divided into subnets keeping kernel tables small

Understand the list of users known on the PEP

```
Expert@R80.10-External:0]# pep sh user all
Command: root->show->user->all
ID (PDP; UID)                        Username@Machine                CID (IP, PacketID)          PT
================================================================================================================
192.168.10.11  :00000000; e70fc1f8   Administrator@win-victim        192.168.10.100           , 00000000  -
192.168.10.11  :00000000; 7a4037ac   Administrator@client-vm         172.23.55.10             , 00000000  -
192.168.10.11  :00000000; 38ea518b   Administrator@win-dc            172.23.55.190            , 00000000  -
192.168.10.11  :00000000; d7bb12cc   Administrator@win-dc            192.168.10.11            , 00000000  -

[Expert@R80.10-External:0]#
```