# AND THEY SAID TO THE TITANS: « WATCH OUT OLYMPIANS IN THE HOUSE! »

**CSEC – Advanced Network Tradecraft**

**SD Conference June 2012**

**Overall Classification: TOP SECRET//SI**

# OLYMPIA & THE CASE STUDY

*OLYMPIA*

CSEC's Network Knowledge Engine

Various data sources
Chained enrichments
Automated analysis

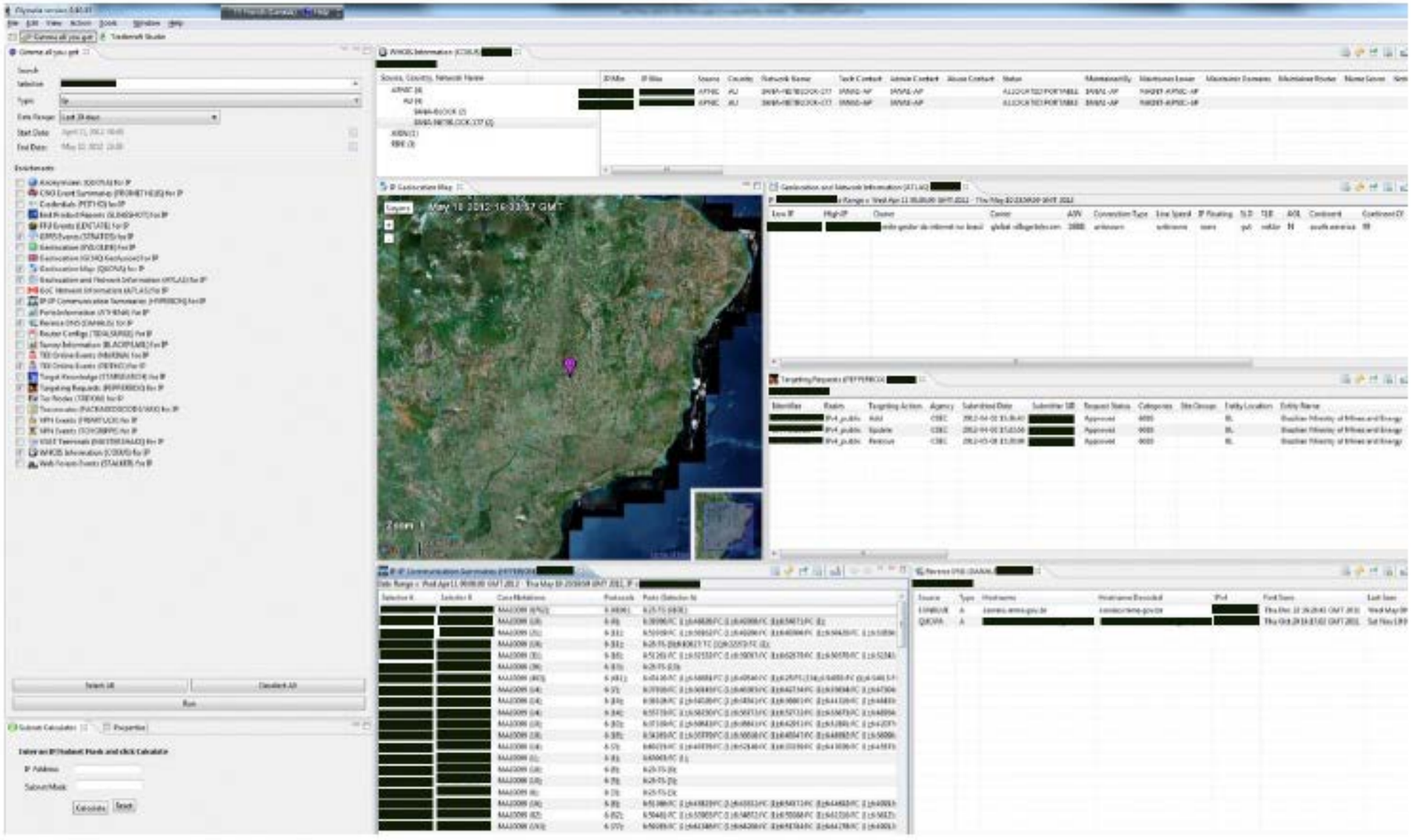
Brazilian Ministry of Mines and Energy (MME)

New target to develop
Limited access/target knowledge

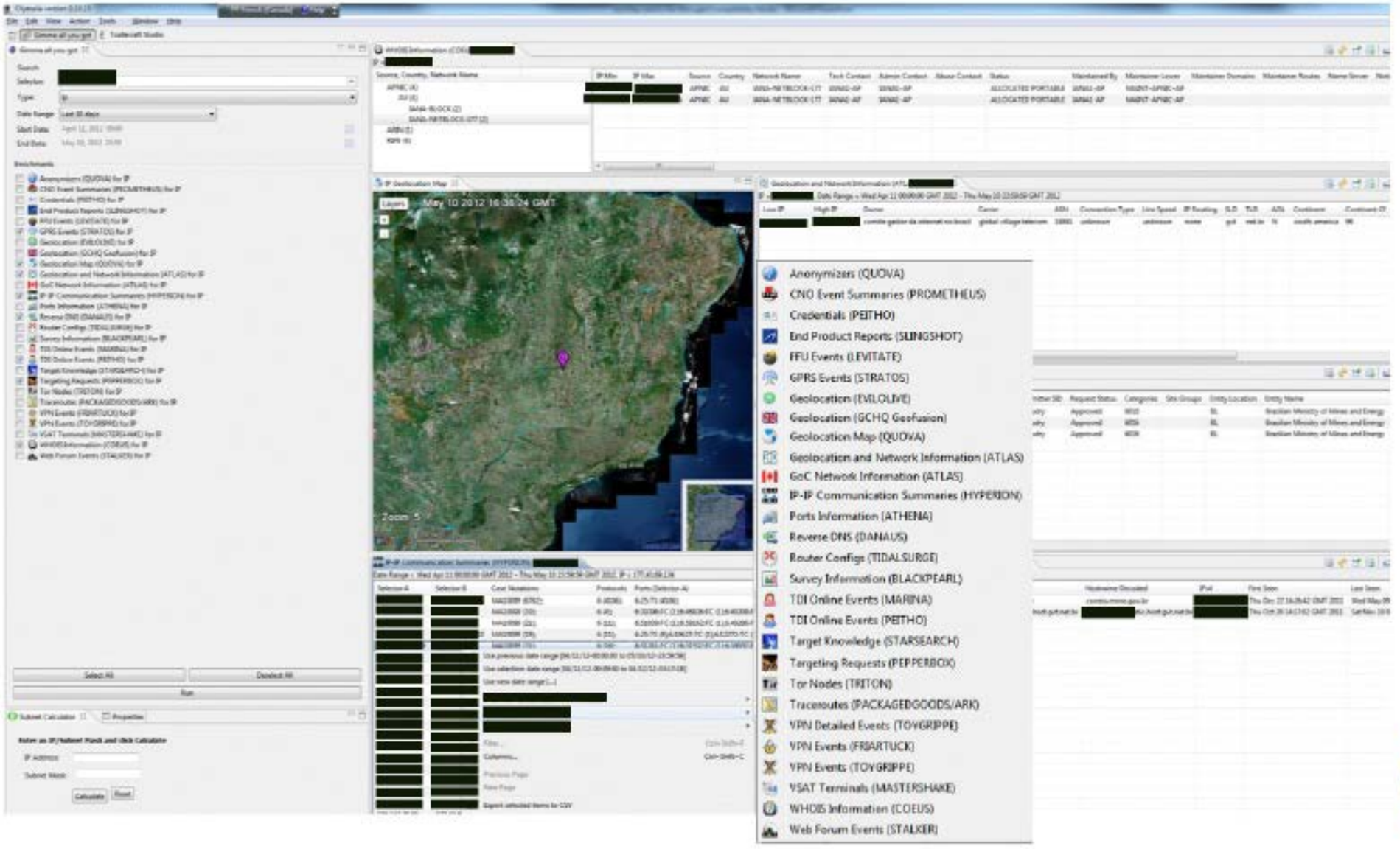
# QUESTIONS

- How can I use the information available in SIGINT data sources to learn about the target?
- What can I find that would help me inform access development efforts?
- Can I automate the analytical process and/or re-use analytics designed for other purposes?

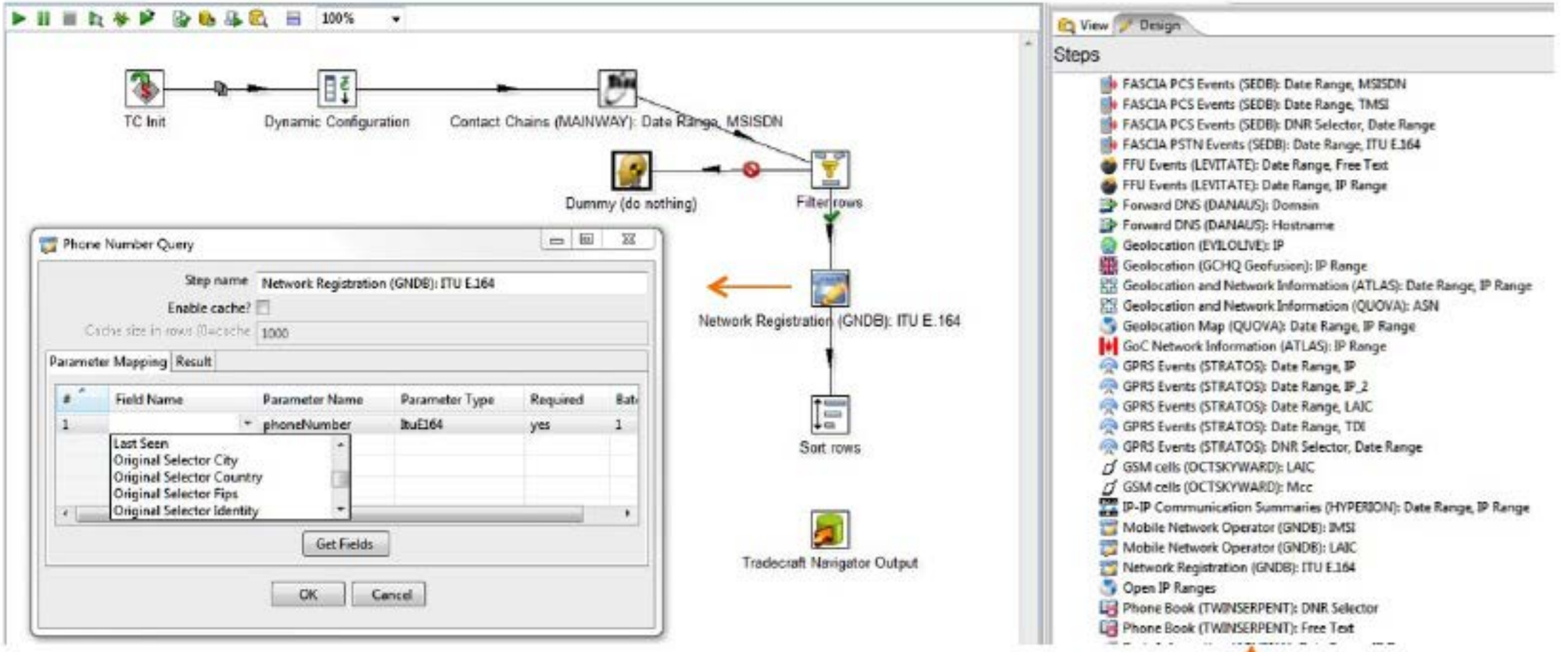
# OLYMPIA AT A GLANCE



# OLYMPIA AT A GLANCE



# OLYMPIA - AUTOMATION



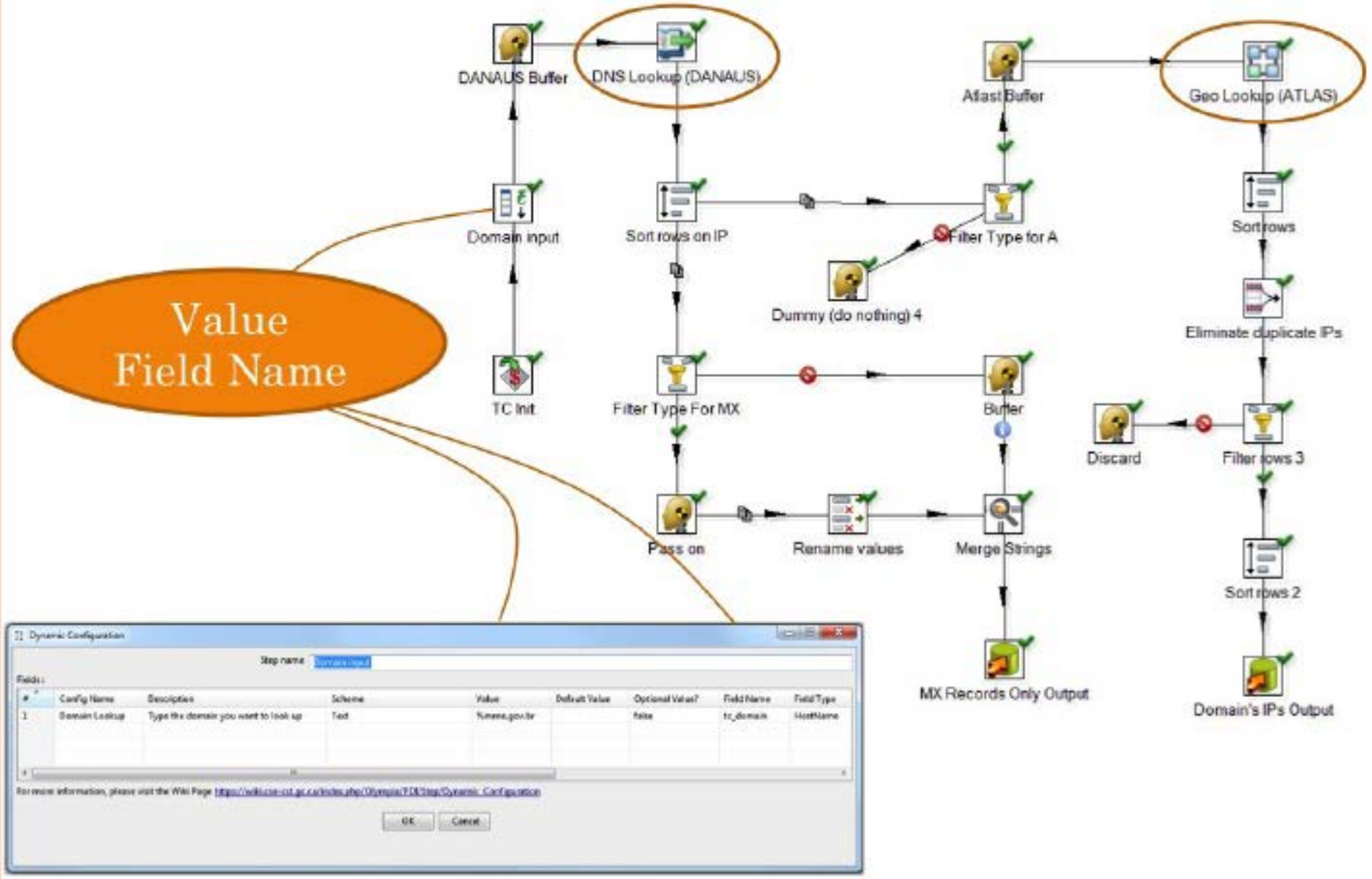

Numerous enrichment and data manipulation nodes
Drag and drop each node
Create links between nodes
Hit the *Play* button

# ANALYSIS – CASE STUDY

What we know about the target:

- Domain: @mme.gov.br
- 9 DNR selectors
- Very little collection

# ANALYSIS – DETERMINE TARGET'S IPs AND ISPs



# ANALYSIS – DETERMINE TARGET'S IPs AND ISPs

## Mail Servers Output

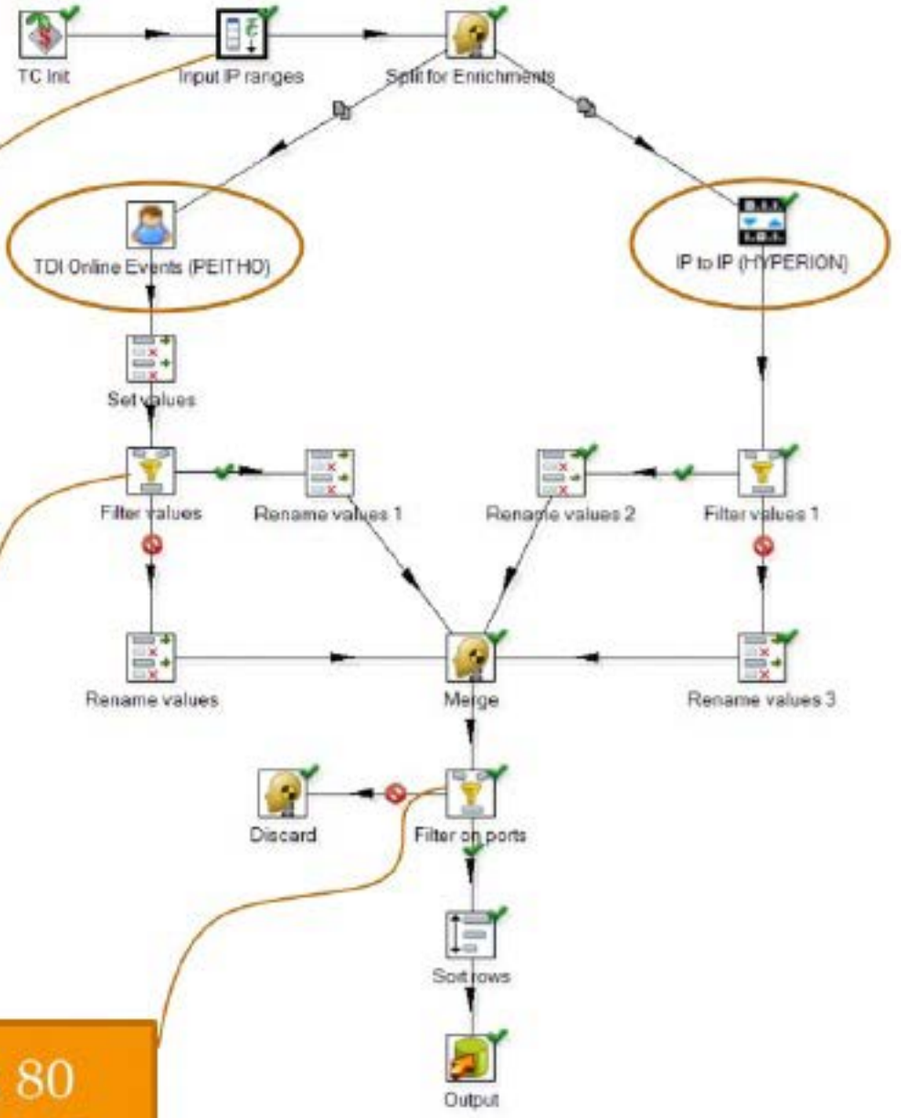
| Response_MX | Hostname | IPv4 | Source | First Seen | Last Seen |
|---|---|---|---|---|---|
| correio.mme.gov.br | correio.mme.gov.br | [redacted] | EONBLUE | Wed Jun 17 06:04:23 GMT 2009 | Mon Feb 15 12:40:53 GMT 2010 |
| correio2.mme.gov.br | correio2.mme.gov.br | [redacted] | QUOVA | Mon Jun 21 13:49:09 GMT 2010 | Sat Nov 19 01:54:18 GMT 2011 |

Hostname
IPv4
Country
ASN
Owner
Carrier

## Domain's IPs Output

| Type | Hostname | IPv4 | IP Range | Country | ASN | Owner | Carrier | Source | First Seen | Last Seen |
|---|---|---|---|---|---|---|---|---|---|---|
| A | ns1.mme.gov.br | [redacted] | [redacted] | brazil | 18881 | comite gestor da internet no brasil | global village telecom | EONBLUE | Wed Dec 21 04:27:57 GMT 2011 | Tue May 08 17:28:22 GMT 2012 |
| A | www.mme.gov.br | [redacted] | [redacted] | brazil | 18881 | comite gestor da internet no brasil | global village telecom | EONBLUE | Thu Dec 22 22:09:58 GMT 2011 | Sat May 05 10:35:59 GMT 2012 |
| A | ns2.mme.gov.br | [redacted] | [redacted] | brazil | 18881 | comite gestor da internet no brasil | global village telecom | EONBLUE | Wed Dec 21 04:27:57 GMT 2011 | Tue May 08 17:28:22 GMT 2012 |
| A | srv041.mme.gov.br | [redacted] | [redacted] | brazil | 18881 | comite gestor da internet no brasil | global village telecom | EONBLUE | Wed Dec 21 04:27:57 GMT 2011 | Wed Apr 25 04:55:02 GMT 2012 |
| A | correio.mme.gov.br | [redacted] | [redacted] | brazil | 18881 | comite gestor da internet no brasil | global village telecom | EONBLUE | Thu Dec 22 16:26:42 GMT 2011 | Wed May 02 21:11:17 GMT 2012 |
| A | acessovpn.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Mon Jun 21 13:49:09 GMT 2010 | Sat Nov 19 01:54:18 GMT 2011 |
| A | ns1.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | EONBLUE | Tue Sep 14 12:31:44 GMT 2010 | Tue Dec 20 15:49:18 GMT 2011 |
| A | correio2.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | EONBLUE | Tue Sep 14 12:31:44 GMT 2010 | Sat Dec 17 07:18:16 GMT 2011 |
| A | www.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | EONBLUE | Thu Feb 11 19:15:47 GMT 2010 | Mon Dec 19 19:40:43 GMT 2011 |
| A | ns2.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | EONBLUE | Wed Sep 15 23:11:59 GMT 2010 | Tue Dec 20 15:49:18 GMT 2011 |
| A | srv041.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | EONBLUE | Thu Mar 03 19:32:08 GMT 2011 | Tue Dec 20 15:49:18 GMT 2011 |
| A | prodeem.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Mon Jun 21 13:49:09 GMT 2010 | Sat Nov 19 01:54:18 GMT 2011 |
| A | srv041.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | EONBLUE | Wed Feb 10 12:51:14 GMT 2010 | Tue Sep 07 09:24:15 GMT 2010 |
| A | correio.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | EONBLUE | Fri Feb 12 20:14:21 GMT 2010 | Sat Dec 17 07:18:16 GMT 2011 |
| A | catalogo.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Mon Jun 21 13:49:09 GMT 2010 | Sat Nov 19 01:54:18 GMT 2011 |
| A | correio.mme.gov.br | [redacted] | [redacted] | brazil | 10954 | comite gestor da internet no brasil | serpro | QUOVA | Thu Feb 19 20:37:24 GMT 2009 | Sat Nov 19 01:53:44 GMT 2011 |
| A | correiomme.mme.gov.br | [redacted] | [redacted] | brazil | 10954 | comite gestor da internet no brasil | serpro | QUOVA | Fri Mar 27 14:03:47 GMT 2009 | Sat Nov 19 01:53:44 GMT 2011 |
| A | urano.mme.gov.br | [redacted] | [redacted] | brazil | 10954 | comite gestor da internet no brasil | serpro | QUOVA | Fri Mar 27 14:04:08 GMT 2009 | Sat Nov 19 01:53:44 GMT 2011 |
| A | terra.mme.gov.br | [redacted] | [redacted] | brazil | 10954 | comite gestor da internet no brasil | serpro | QUOVA | Fri Mar 27 14:04:08 GMT 2009 | Sat Nov 19 01:53:44 GMT 2011 |
| A | www.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Tue May 19 11:27:09 GMT 2009 | Sat Nov 19 01:52:58 GMT 2011 |
| A | catalogo.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Mon May 03 15:09:41 GMT 2010 | Sat Nov 19 01:52:58 GMT 2011 |
| A | webpac.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Tue May 19 11:27:09 GMT 2009 | Sat Nov 19 01:52:58 GMT 2011 |
| A | prodeem.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Mon May 03 15:09:41 GMT 2010 | Sat Nov 19 01:52:58 GMT 2011 |
| A | urano.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Tue May 19 11:27:09 GMT 2009 | Sat Nov 19 01:52:58 GMT 2011 |
| A | terra.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Mon Apr 20 11:12:46 GMT 2009 | Sat Nov 19 01:52:58 GMT 2011 |
| A | correio.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Tue May 19 11:27:09 GMT 2009 | Sat Nov 19 01:52:58 GMT 2011 |
| A | acessovpn.mme.gov.br | [redacted] | [redacted] | brazil | 4230 | comite gestor da internet no brasil | embratel | QUOVA | Mon May 03 15:09:41 GMT 2010 | Sat Nov 19 01:52:58 GMT 2011 |

# ANALYSIS – DISCOVER TARGET'S PROXY


High IP

Low IP

IP Range

REMOTE PORT contains 80
REMOTE PORT contains 443

# ANALYSIS – DISCOVER TARGET'S PROXY

Entity IP : [redacted]

Remote IP : various

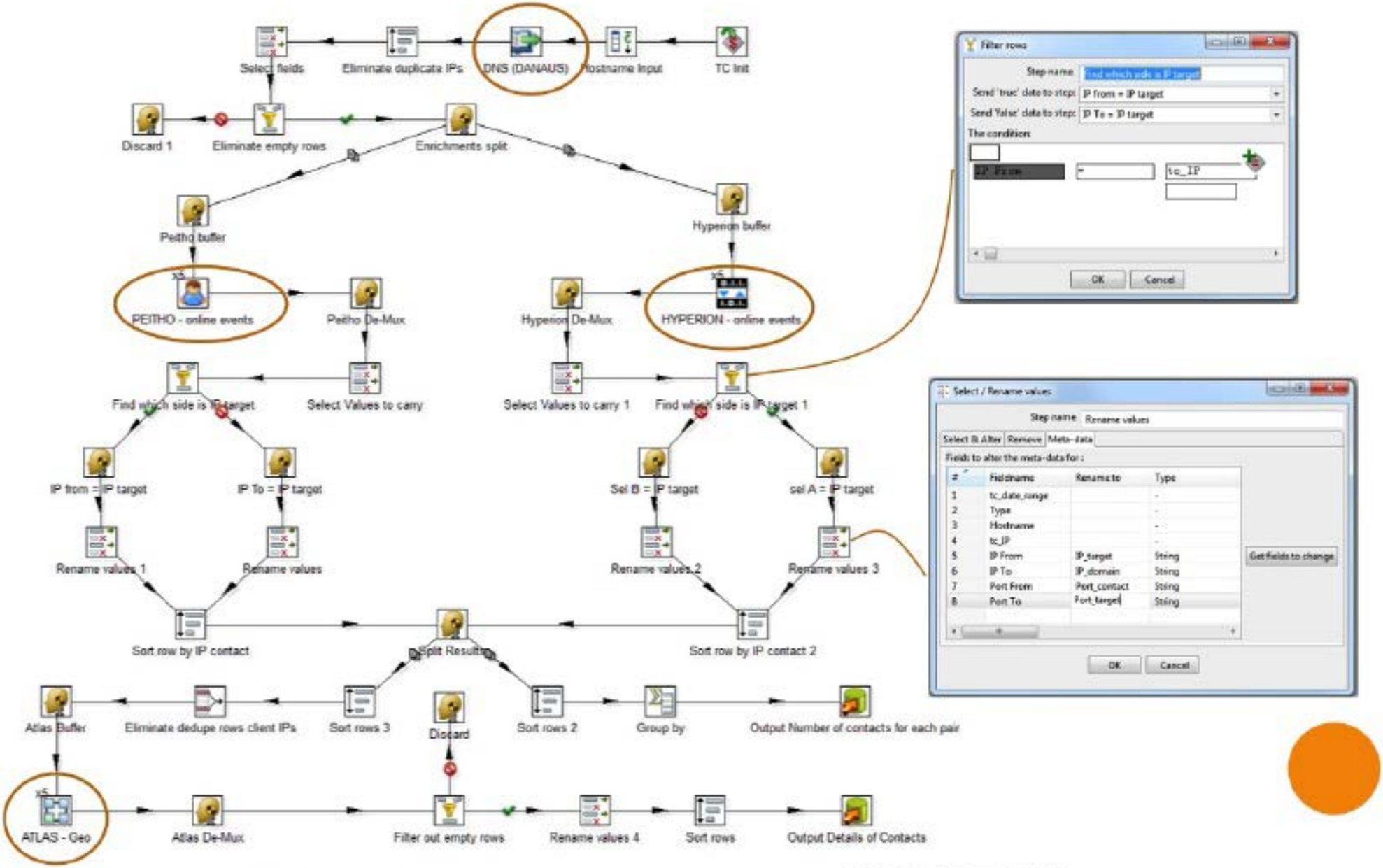
Remote Port : 443

Entity Port: various

Target Proxy Output

| entity_IP | remote_IP | remote_port | entity_port |
|---|---|---|---|
| [redacted] | [redacted] | 6:443:TS (1); | 6:47367:FC (1); |
| [redacted] | [redacted] | 6:443:TS (1); | 6:27973:FC (1); |
| [redacted] | [redacted] | 6:443:TS (1); | 6:48329:FC (1); |
| [redacted] | [redacted] | 6:443:TS (2); | 6:47950:FC (1);6:483 |
| [redacted] | [redacted] | 6:443:TS (2); | 6:54695:FC (1);6:435 |
| [redacted] | [redacted] | 6:443:TS (4); | 6:31670:FC (1);6:343 |
| [redacted] | [redacted] | 6:443:TS (5); | 6:1263:FC (1);6:4115 |
| [redacted] | [redacted] | 6:443:FS (12); | 6:48927:TC (1);6:489 |
| [redacted] | [redacted] | 6:443:TS (179);6:80:T | 6:26704:FC (1);6:267 |
| [redacted] | [redacted] | 6:443:TS (1); | 6:11217:FC (1); |
| [redacted] | [redacted] | 6:443:TS (165); | 6:12946:FC (1);6:152 |
| [redacted] | [redacted] | 6:443:TS (1); | 6:60657:FC (1); |
| [redacted] | [redacted] | 6:443:TS (1); | 6:45811:FC (1); |
| [redacted] | [redacted] | 6:443:TS (14);6:80:TS | 6:19170:FC (2);6:536 |

# ANALYSIS – DETERMINE IPs MY TARGET COMMUNICATES WITH



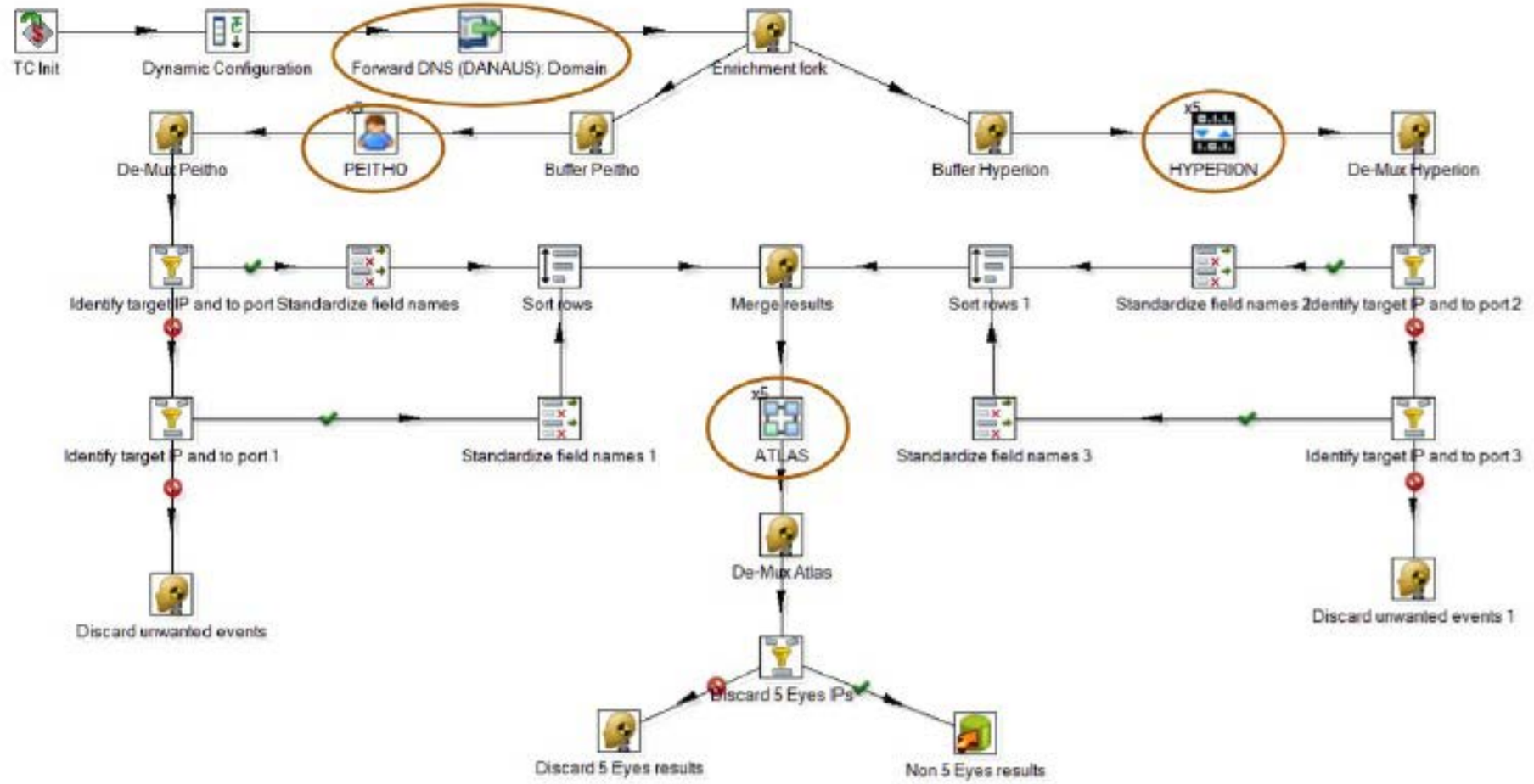
# ANALYSIS – DETERMINE IPs MY TARGET COMMUNICATES WITH

| Hostname domain | IP domain | IP in contact with domain | Port used by IP domain | Port used by IP contact | Owner of IP contact | Carrier of IP contact | ASN of IP contact | Country of IP contact | IP range for IP contact |
|---|---|---|---|---|---|---|---|---|---|
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:61991:FC (1); | tse i net noc ip infrastrcture | british telecommunications plc | 5400 | eritrea | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:63181:FC (1); | tse i net noc ip infrastrcture | british telecommunications plc | 5400 | eritrea | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (2);6:25:FS (1); | 6:54291:FC (2) | tata communications | tata communications | 6453 | canada | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:28151:FC (1); | jtc | jordan telecommunications com | 8697 | jordan | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:2990:FC (1); | reassign to idc-cbw- idc customers | loxinfo public company limite | 9891 | thailand | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:FS (1); | 6:50072:TC (1); | internal network | international data exchange llc | 12524 | jordan | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:51934:FC (1); | pars online | parsonline | 16322 | iran | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:2295:FC (1); | dsl home subscribers | saudinet | 25019 | saudi arabia | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:1799:FC (1); | dsl home subscribers | saudinet | 25019 | saudi arabia | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:50329:FC (1); | dsl home subscribers | saudinet | 25019 | saudi arabia | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (1); | 6:22423:FC (1); | saudinet saudi telecom compon | saudinet | 25019 | saudi arabia | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:54596:TC | 6:25:FS (128); | iweb dedicated hd | iweb technologies inc. | 32613 | canada | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:33907:TC | 6:25:FS (22); | iweb dedicated hd | iweb technologies inc. | 32613 | canada | [redacted] |
| correio.mme.gov.br | [redacted] | [redacted] | 6:25:TS (4); | 6:57773:FC | middle east internet company li | cyberia riyadh | 34397 | saudi arabia | [redacted] |
| www.mme.gov.br | [redacted] | [redacted] | 6:80:FS (1); | 6:54791:TC (1); | adsl service | sahara net | 41176 | saudi arabia | [redacted] |

Hostname starting domain
IP starting domain
IP in contact with starting domain
Port used by starting domain
Port used by IP contact

Owner of IP contact
Carrier of IP contact
ASN of IP contact
Country of IP contact
IP range for IP contact

# ANALYSIS – IDENTIFY POTENTIAL MAN ON THE SIDE OPERATION AGAINST MY TARGET



# ANALYSIS – IDENTIFY POTENTIAL MAN ON THE SIDE OPERATION AGAINST MY TARGET

Results

| target_hostname | target | contact | target_port | contact_port | Case Notations | Country | Digraph |
|---|---|---|---|---|---|---|---|
| acessovpn.mme.gov.br | [redacted] | [redacted] | 6:41278:TC (1); | 6:80:FS (1); | MA10099 (1); | brazil | br |
| acessovpn.mme.gov.br | [redacted] | [redacted] | 6:30141:TC (1); | 6:80:FS (1); | MA10099 (1); | brazil | br |

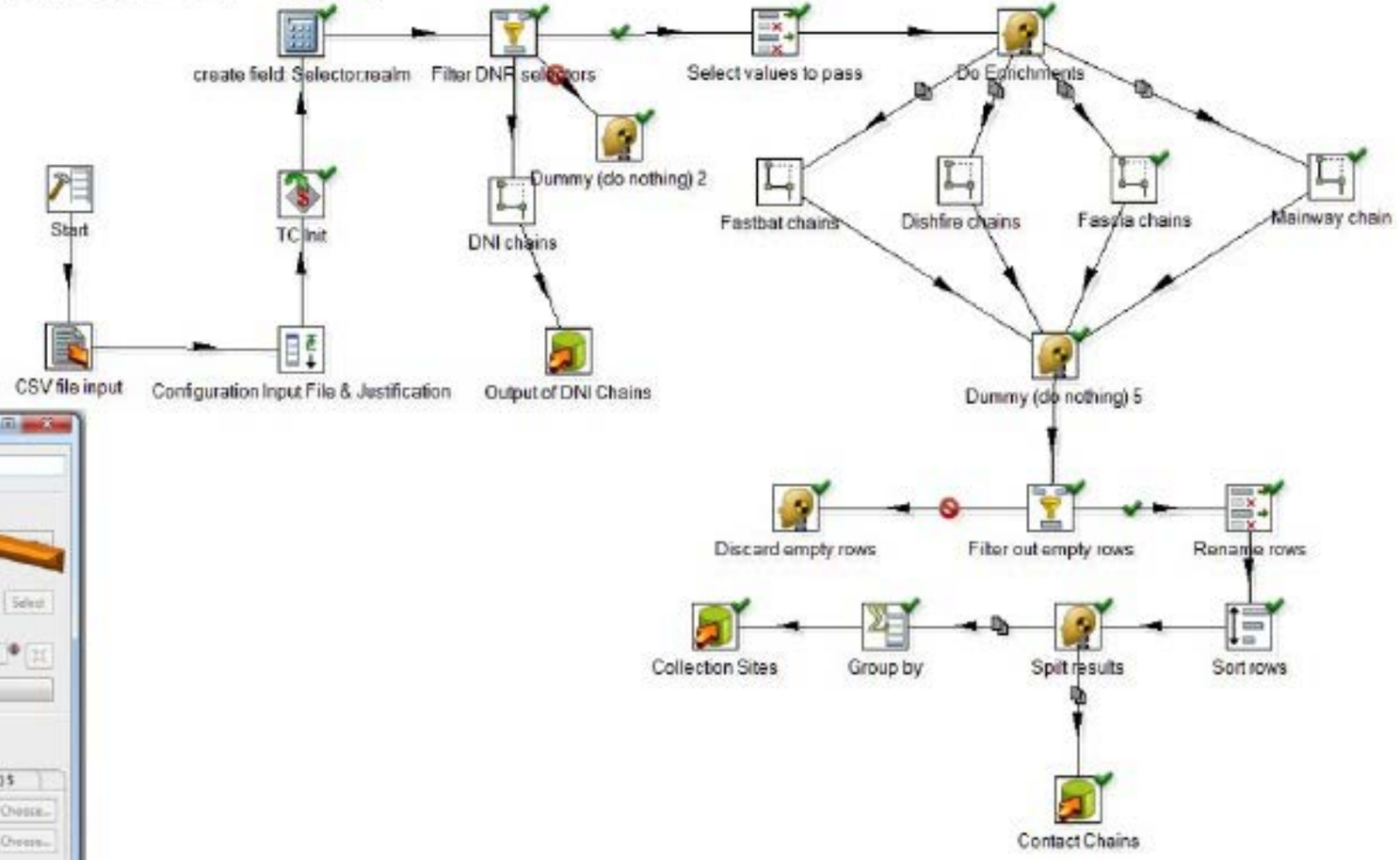
[redacted]

| ASN contact | Country contact | # IPs contact |
|---|---|---|
| 18881 | brazil | 26 |
| 7738 | brazil | 11 |
| 26599 | brazil | 6 |
| 19182 | brazil | 3 |
| 10429 | brazil | 2 |
| 27717 | brazil | 2 |
| 53006 | brazil | 2 |
| 14080 | colombia | 1 |
| 16735 | brazil | 1 |
| 32613 | brazil | 1 |
| 52972 | brazil | 1 |
| 8151 | mexico | 1 |

[redacted]

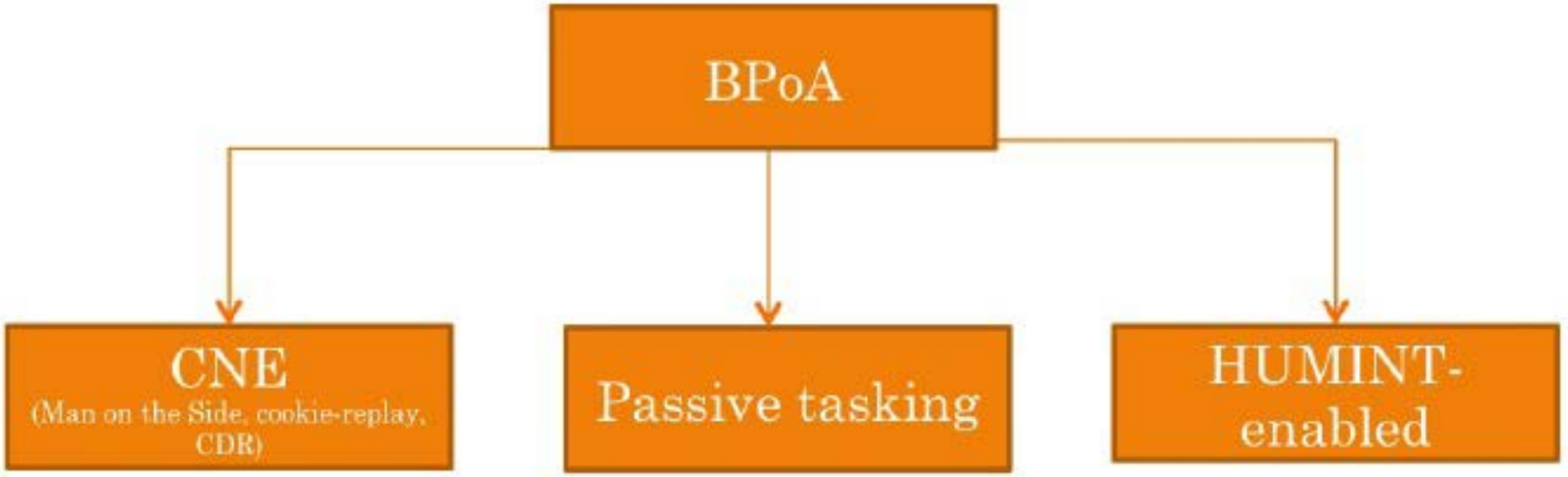
| ASN contact | Country contact | # IPs contact |
|---|---|---|
| 18881 | brazil | 15 |
| 26599 | brazil | 9 |
| 10429 | brazil | 7 |
| 16735 | brazil | 5 |
| 18479 | brazil | 3 |
| 45774 | india | 3 |
| 7738 | brazil | 3 |
| 19182 | brazil | 2 |
| 27699 | brazil | 2 |
| 13878 | brazil | 1 |
| 14080 | colombia | 1 |
| 16509 | brazil | 1 |
| 17379 | brazil | 1 |
| 28311 | brazil | 1 |
| 28670 | brazil | 1 |
| 32613 | brazil | 1 |
| 4808 | china | 1 |
| 53018 | brazil | 1 |
| 53070 | brazil | 1 |
| 9829 | india | 1 |

# ANALYSIS – DISCOVER CONTACTS OF MY TARGET AND COLLECTION SITES I SEE MY TARGET ON




# SUMMARY

Based on the information collected, I am better positioned to analyse my target's telecoms environment.



# MOVING FORWARD

- I have identified MX servers which have been targeted to passive collection by the Intel analysts, who are assessing the value, provenance, etc. of the traffic generated by the mail servers.

- I am working with TAO to further examine the possibility for a Man on the Side operation.

- Based on the network information gathered, the NAC has started a BPoA analysis on the MME.