Analyzing the DNS records

The goal of using the tools in the DNS records category is to collect information about the DNS servers and the corresponding records of a target domain.

The following are several common DNS record types:

No.	Record type	Description
1	`SOA`	This is the start of authority record.
2	`NS`	This is the name server record.
3	`A`	This is the IPv4 address record.
4	`MX`	This is the mail exchange record.
5	`PTR`	This is the pointer record.
6	`AAAA`	This is the IPv6 address record.
7	`CNAME`	This is the abbreviation for canonical name. It is used as an alias name for another canonical domain name.

For example, in a penetration test engagement, the customer may ask you to find out all of the hosts and IP addresses available for their domain. The only information you have is the organization's domain name. We will look at several common tools that can help you if you encounter this situation.

host

After we get the DNS server information, the next step is to find out the IP address of a hostname. To help us out on this matter, we can use the following `host` command-line tool to lookup the IP address of a host from a DNS server:

```
# host www.example.com
```

The following is the command's result:

```
www.example.com has address 192.0.43.10
www.example.com has IPv6 address 2001:500:88:200::10
```

Looking at the result, we know the IPv4 and IPv6 addresses of the host `www.example.com` .

By default, the `host` command will look for the `A` , `AAAA` , and `MX` records of a domain. To query for any records, just give the `-a` option to the command.

```
# host -a example.com
Trying "example.com"
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 25153
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 2

;; QUESTION SECTION:
```

```
;example.com.                   IN      ANY
;; ANSWER SECTION:
example.com.            3201    IN      SOA     dns1.icann.org.
hostmaster.icann.org. 2012080782 7200 3600 1209600 3600
example.com.            46840   IN      NS      a.iana-servers.net.
example.com.            46840   IN      NS      b.iana-servers.net.

;; ADDITIONAL SECTION:
b.iana-servers.net.     1401    IN      A       199.43.133.53
a.iana-servers.net.     1401    IN      A       199.43.132.53

Received 170 bytes from 202.152.165.39#53 in 563 ms
```

The `host` command looks for these records by querying the DNS servers listed in the `/etc/resolv.conf` file of your Kali Linux system. If you want to use other DNS servers, just give the DNS server address as the last command-line option.

Note

If you give the domain name as the command-line option in `host`, the method is called forward lookup, but if you give an IP address as the command-line option to the `host` command, the method is called reverse lookup.

Try to do a reverse lookup of the following IP address:

```
host 23.23.144.81
```

What information can you get from this command?

The `host` tool can also be used to do a DNS zone transfer. With this mechanism, we can collect information about the available hostnames in a domain.

Note

A DNS zone transfer is a mechanism used to replicate a DNS database from a master DNS server to another DNS server, usually called a slave DNS server. Without this mechanism, the administrators have to update each DNS server separately. The DNS zone transfer query must be issued to an authoritative DNS server of a domain.

Due to the nature of information that can be gathered by a DNS zone transfer, nowadays, it is very rare to find a DNS server that allows zone transfer to an arbitrary zone transfer request.

If you find a DNS server that allows zone transfer without limiting who is able to do it, this means that the DNS server has been configured incorrectly.

The following is an example of performing DNS zone transfer for a domain via a misconfigured DNS server:

```
# host -l example.com ns4.isp.com
```

The following is the DNS zone transfer result:

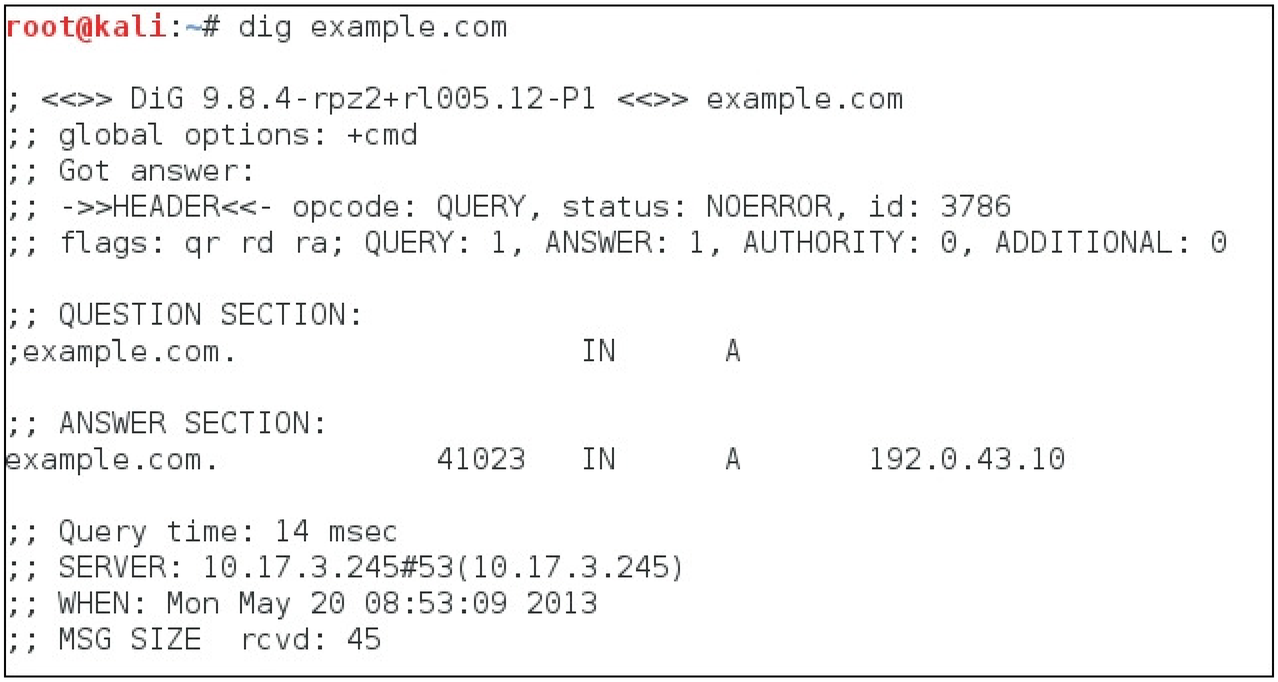
```
Using domain server:
Name: ns4.isp.com
Address: 172.16.176.22#53
Aliases:

example.com name server ns1.isp.com.
example.com name server ns2.isp.com.
example.com has address 192.168.1.1
smtp.example.com has address 192.168.1.2
mail.example.com has address 192.168.1.3
webmail.example.com has address 192.168.1.3
www.example.com has address 192.168.1.4
```

The `host` command will return information about the NS, PTR, and address records of a domain. In this case, the misconfigured DNS server is `ns4.isp.com` .

dig

Besides the `host` command, you can also use the `dig` command to do DNS interrogation. The advantages of `dig` compared to `host` are its flexibility and clarity of output. With `dig` , you can ask the system to process a list of lookup requests from a file.

Let's use `dig` to interrogate the `example.com` domain:



```
root@kali:~# dig example.com

; <<>> DiG 9.8.4-rpz2+rl005.12-P1 <<>> example.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 3786
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;example.com.                   IN      A

;; ANSWER SECTION:
example.com.            41023   IN      A       192.0.43.10

;; Query time: 14 msec
;; SERVER: 10.17.3.245#53(10.17.3.245)
;; WHEN: Mon May 20 08:53:09 2013
;; MSG SIZE  rcvd: 45
```

Without giving any options besides the domain name, the `dig` command will only return the `A` record of a domain. To request for any other DNS record type, we can give the `type` option in the command line:

```
# dig example.com any

; <<>> DiG 9.7.0-P1 <<>> example.com any
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 40971
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 2

;; QUESTION SECTION:
;example.com.                   IN      ANY

;; ANSWER SECTION:
example.com.            3565    IN      SOA     dns1.icann.org.
hostmaster.icann.org. 2012080782 7200 3600 1209600 3600
example.com.            83186   IN      AAAA    2001:500:88:200::10
example.com.            48296   IN      NS      b.iana-servers.net.
example.com.            48296   IN      NS      a.iana-servers.net.

;; ADDITIONAL SECTION:
a.iana-servers.net.     182     IN      A       199.43.132.53
b.iana-servers.net.     182     IN      A       199.43.133.53
```

```
;; Query time: 327 msec
;; SERVER: 202.152.165.39#53(202.152.165.39)
;; WHEN: Sat Aug 18 10:46:09 2012
;; MSG SIZE  rcvd: 198
```

From the result, we can see that the `dig` output now returns the DNS records of `SOA` , `NS` , `A` , and `AAAA` .

To do zone transfer using `dig` , we must set the authoritative DNS server for that domain and set `axfr` as the type:

```
# dig @ns4.isp.com example.com axfr
```

Following is the abridged result of the preceding command:

```
; <<>> DiG 9.7.0-P1 <<>> @ns4.isp.com example.com axfr
; (1 server found)
;; global options: +cmd
example.com.          3600    IN      SOA     ns1.isp.com.
hostmaster.isp.com. 2011020409 900 600 86400 3600
example.com.          3600    IN      NS     ns1.isp.com.
example.com.          3600    IN      NS     ns4.isp.com.
example.com.          3600    IN      A      192.168.1.1
example.com.          3600    IN      MX     192.168.1.3
mail.example.com.     3600    IN      A      192.168.1.3
webmail.example.com.  3600    IN      A      192.168.1.3
www.example.com.      3600    IN      A      192.168.1.4
example.com.          3600    IN      SOA    ns1.isp.com.
hostmaster.isp.com. 2011020409 900 600 86400 3600
;; Query time: 855 msec
;; SERVER: 172.16.176.22#53 (172.16.176.22)
;; WHEN: Sat Aug 18 10:59:11 2012
;; XFR size: 9 records
```

We can see in the preceding result that the DNS records are similar to those of the `host` command. Based on this, we can be confident about the DNS records collected.

dnsenum

To collect information from a DNS server, we can utilize `dnsenum` . The DNS information that can be gathered is as follows:

- The host IP addresses
- The DNS server of a domain
- The `MX` record of a domain

Note

In this chapter, you may see that we used several tools that generate similar results, this is because we need to validate the information collected. If the information is found in more than one tool, we can be more confident with the information.

Besides being used to get DNS information, `dnsenum` also has the following features:

- Get additional names and subdomains utilizing the Google search engine.
- Find out subdomain names by brute forcing the names from the text files. The `dnsenum` tool included in Kali Linux comes with a `dns.txt` dictionary file that contains 1,480 subdomain names and a `dns-big.txt` file, which contains 266,930 subdomain names.

- Carry out `Whois` queries on C-class domain network ranges and calculate its network ranges.
- Carry out reverse lookup on network ranges.
- Use threads to process different queries.

To access `dnsenum`, go to the console and type the following command:

```
# dnsenum
```

This will display the usage instruction on your screen.

As an example of the `dnsenum` tool usage, we will use `dnsenum` to get DNS information from a target domain. The command to do this is as follows:

```
# dnsenum example.com
```

The following is the abridged result of that command:

```
dnsenum.pl example.com
dnsenum.pl VERSION:1.2.2

-----   example.com   -----

Host's addresses:
__________________


Name Servers:
______________

ns1.isp.com    10771    IN    A         172.168.1.2
ns0.isp.com    7141     IN    A         172.168.1.1


Mail (MX) Servers:
___________________

hermes1.example.com  86400    IN    A         192.168.10.3
hermes.example.com  3600     IN    A         192.168.10.2


Trying Zone Transfers and getting Bind Versions:
_________________________________________________


Trying Zone Transfer for example.com on ns0.isp.com ...
AXFR record query failed: NOERROR

ns0.isp.com Bind Version:
DNS server
Trying Zone Transfer for example.com on ns1.isp.com ...
example.com                     86400    IN    SOA
example.com                     86400    IN    NS
example.com                          86400    IN    MX
example.com                          86400    IN    TXT
admin.example.com                    3600     IN    NS
blogs.example.com                    3600     IN    NS
ftp.example.com             3600     IN    A      192.168.10.4
hermes.example.com            3600     IN    A    192.168.10.2
hermes.example.com               86400    IN    TXT
hermes.example.com               86400    IN    SPF
hermes1.example.com          86400    IN    A        192.168.10.2
www.example.com            3600     IN    NS

ns1.isp.com Bind Version:
DNS server

brute force file not specified, bay.
```

Using the default options of `dnsenum`, we can get information about the host address, name servers, and the mail server's IP address. Fortunately, the `ns1.isp.com` DNS server allows us to do zone transfer for the `example.com` domain.

In the case that the zone transfer is not successful, we can do brute forcing of the lookups to find the subdomains from a wordlist. For example, if we want to brute force the subdomain using the provided text file wordlist (`dns.txt`), the following is the appropriate command:

```
dnsenum -f dns.txt example.com
```

The following is the result of the brute forcing process:

```
Brute forcing with
dns.txt:

____________________________



apps.example.com    86400    IN    A
192.168.10.152
mail.example.com    86400    IN    A        192.168.10.107
portal.example.com  86400    IN    A        192.168.10.249
```

Beware that brute forcing the DNS lookups will take some time to finish.

Luckily for us, the target domain uses common subdomain names. So we are able to find several subdomains (`apps` , `mail` , and `portal`) in the target domain based on the dictionary file we have.

Another technique that can be used to find the subdomain is by using Google. This will be useful if the DNS zone transfer is disabled. To use Google, just add the options `-p` for the number of Google pages to be processed or `-s` to define the number of subdomains to be collected. You may also want to set the number of threads to do the queries (`--threads`) in order to speed up the process.

dnsdict6

Up until now, we only talked about the DNS tools to enumerate the subdomains in IP Version 4. If you want to enumerate the IP Version 6 subdomains, you can use `dnsdict6` from the **The Hacker's Choice** (**THC**) group.

To access `dnsdict6` in Kali Linux, you can use the console and type the following command:

```
# dnsdict6
```

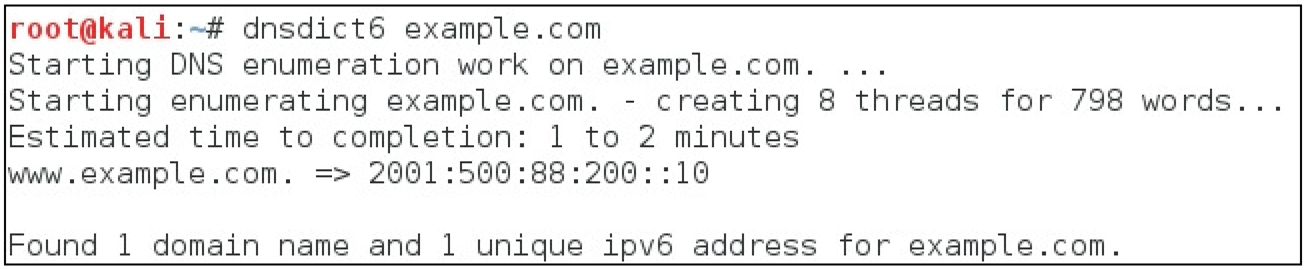
It will display the `dsndict6` help page.

Without giving any options, `dnsdict6` will use the built-in wordlist and eight threads.

Let's enumerate the subdomains available in the `example.com` domain using the following command line:

```
# dnsdict6 example.com
```

The following screenshot shows the result of this command:



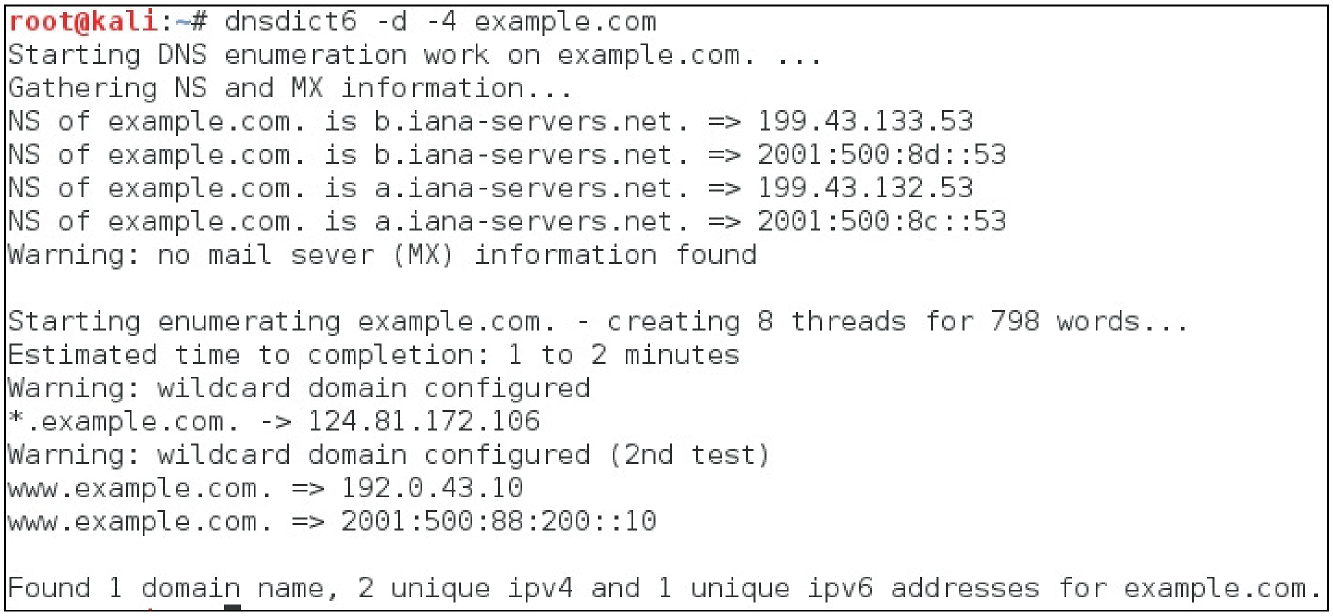
```
root@kali:~# dnsdict6 example.com
Starting DNS enumeration work on example.com. ...
Starting enumerating example.com. - creating 8 threads for 798 words...
Estimated time to completion: 1 to 2 minutes
www.example.com. => 2001:500:88:200::10

Found 1 domain name and 1 unique ipv6 address for example.com.
```

After brute forcing the subdomain using the `dnsdict6` built-in wordlist (containing 798 words), we know that there is only one subdomain (`www`) available in the `example.com` domain that has an IP Version 6 address.

Note

We found that the number of words displayed by `dnsdict6` is incorrect. We tested this using a file containing three words; the `dnsdict6` command informed us that the number of words is four.

Also, the `dnsdict6` tool can be used to find the subdomain on IP Version 4 using the `-4` , option, and it can also collect information about the DNS and NS of a domain by using the `-d` option. Let's use these options to check the `example.com` domain:



```
root@kali:~# dnsdict6 -d -4 example.com
Starting DNS enumeration work on example.com. ...
Gathering NS and MX information...
NS of example.com. is b.iana-servers.net. => 199.43.133.53
NS of example.com. is b.iana-servers.net. => 2001:500:8d::53
NS of example.com. is a.iana-servers.net. => 199.43.132.53
NS of example.com. is a.iana-servers.net. => 2001:500:8c::53
Warning: no mail sever (MX) information found

Starting enumerating example.com. - creating 8 threads for 798 words...
Estimated time to completion: 1 to 2 minutes
Warning: wildcard domain configured
*.example.com. -> 124.81.172.106
Warning: wildcard domain configured (2nd test)
www.example.com. => 192.0.43.10
www.example.com. => 2001:500:88:200::10

Found 1 domain name, 2 unique ipv4 and 1 unique ipv6 addresses for example.com.
```

fierce

The `fierce` tool is a DNS enumeration tool that uses several techniques to find all of the IP addresses and hostnames of a target. It works by first querying your system's DNS server for the target DNS server; next, it uses the target DNS server. It also supports the wordlist supplied by the user to find subdomain names. It does this recursively until all of the wordlist items are tested. The main feature of `fierce` is that it can be used to locate noncontiguous IP space and hostnames against specified domains.

To access `fierce` in Kali Linux, you can use the console and type the following command:

```
# fierce -h
```

This will display the usage instructions on your screen.

As an example, let's use `fierce` to find information about a domain:

```
#  fierce -dns example.com  -threads 3
```

The following is the abridged result:

```
DNS Servers for targetdomain.com:
        ns4.example.com
        ns1.example.com
        ns2.example.com
        ns3.example.com

Trying zone transfer first...
        Testing ns4.example.com
                Request timed out or transfer not allowed.
        Testing ns1.example.com
                Request timed out or transfer not allowed.
        Testing ns2.example.com
                Request timed out or transfer not allowed.
        Testing ns3.example.com
                Request timed out or transfer not allowed.

Unsuccessful in zone transfer (it was worth a shot)
Okay, trying the good old fashioned way... brute force

Checking for wildcard DNS...
Nope. Good.
Now performing 1895 test(s)...
192.168.116.3    voips.example.com
192.168.116.7    ns.example.com
192.168.116.19   streaming.example.com
192.168.117.50   dev.example.com
192.168.117.16   mx1.example.com
192.168.117.17   mx2.example.com
192.168.117.18   mx3.example.com
192.168.117.16   imap.example.com
192.168.117.5    www.example.com
192.168.117.6    intra.example.com
192.168.117.17   mail.example.com
192.168.117.5    web.example.com
192.168.117.16   webmail.example.com

Subnets found (may want to probe here using nmap or unicornscan):
        192.168.73.0-255 : 2 hostnames found.
        192.168.46.0-255 : 1 hostnames found.
        192.168.116.0-255 : 34 hostnames found.
        192.168.117.0-255 : 25 hostnames found.

Done with Fierce scan: http://ha.ckers.org/fierce/
Found 62 entries.

Have a nice day.
```

It may take some time to finish the DNS enumeration using `fierce` .

> **Note**
>
> In this section, we talked a lot about finding hostnames for a domain; you may ask what are the purposes of these hostnames. In a penetration testing project, one of the authors found a web meeting session after getting the hostnames' result from the DNS analysis phase. That host allowed the author to join the ongoing web meeting session.

DMitry

DMitry (**Deepmagic Information Gathering Tool**) is an all-in-one information gathering tool. It can be used to gather the following information:

- The `Whois` record of a host by using the IP address or domain name
- Host information from Netcraft.com
- Subdomains in the target domain
- The e-mail address of the target domain
- Open, filtered, or closed port lists on the target machine by performing a port scan

Even though this information can be obtained using several Kali Linux tools, it is very handy to gather all of the information using a single tool and to save the report to one file.

> **Note**
>
> We thought this tool is more suitable to be categorized under DNS analysis instead of the Route analysis section because the capabilities are more about DNS analysis rather than in routing analysis.

To access `DMitry` from the Kali Linux menu, navigate to **Applications** | **Kali Linux** | **Information Gathering** | **OSINT Analysis** | **dmitry** or you can use the console and type the following command:

```
# dmitry
```

As an example, let's do the following to a targethost:

- Perform a `Whois` lookup
- Get information from Netcraft.com
- Search for all the possible subdomains
- Search for all the possible e-mail addresses

The command for performing the mentioned actions is as follows:

```
# dmitry -iwnse targethost
```

The following is the abridged result of the preceding command:

```
Deepmagic Information Gathering Tool
"There be some deep magic going on"

HostIP:192.168.xx.xx
HostName:targethost
Gathered Netcraft information for targethost
---------------------------------
Retrieving Netcraft.com information for targethost
No uptime reports available for host: targethost

Gathered Subdomain information for targethost
---------------------------------
```

```
Searching Google.com:80...
HostName:targethost
HostIP:192.168.xx.xx
HostName:www.ecom.targethost
HostIP:192.168.xx.xx
HostName:blogs.targethost
HostIP:192.168.xx.xx
HostName:static.targethost
HostIP:192.168.xx.xx
HostName:webmail.targethost
HostIP:192.168.xx.xx
...
Gathered E-Mail information for targethost
---------------------------------
Found 0 E-Mail(s) for host targethost, Searched 0 pages containing 0
results
```

We can also use `DMitry` to perform a simple port scan by giving the following command:

```
# dmitry -p targethost -f -b
```

The result of the preceding command is as follows:

```
Deepmagic Information Gathering Tool
"There be some deep magic going on"

HostIP:192.168.xx.xx
HostName:targethost

Gathered TCP Port information for 192.168.xx.xx
 Port           State
...
80/tcp          open
...
135/tcp         filtered
136/tcp         filtered
137/tcp         filtered
138/tcp         filtered
139/tcp         filtered

Portscan Finished: Scanned 150 ports, 138 ports were in state closed
```

From the preceding command, we find that the targethost is using a device to do packet filtering. It only allows incoming connections to port `80`, which is commonly used for a web server.

Maltego

Maltego is an open source intelligence and forensics application. It allows you to mine and gather information and represent the information in a meaningful way. The word open source in Maltego means that it gathers information from the open source resources. After gathering the information, Maltego allows you to identify the key relationship between the information gathered.

Maltego is a tool that can graphically display the links between data, so it will make it easier to see the common aspects between pieces of information.

Maltego allows you to enumerate the following Internet infrastructure information:

- Domain names
- DNS names

- `Whois` information
- Network blocks
- IP addresses

It can also be used to gather the following information about people:

- Companies and organizations related to the person
- E-mail addresses related to the person
- Websites related to the person
- Social networks related to the person
- Phone numbers related to the person

Kali Linux, by default, comes with Maltego 3.3.0 Kali Linux edition. The following are the limitations of the community version (http://www.paterva.com/web5/client/community.php):

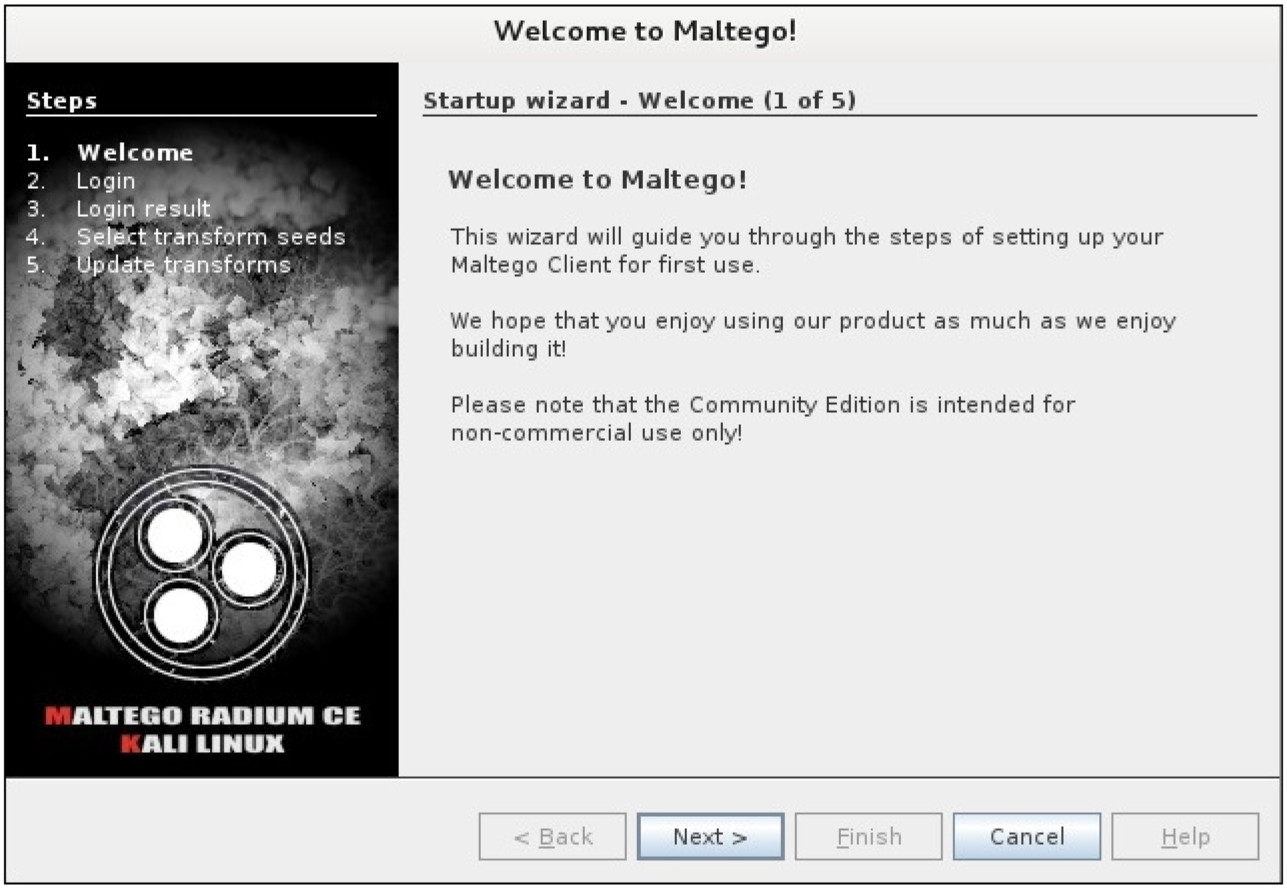
- Not for commercial use
- A maximum of 12 results per transform
- You need to register yourself on our website to use the client
- API keys expire every couple of days
- Runs on a (slower) server that is shared with all community users
- Communication between client and server is not encrypted
- Not updated until the next major version
- No end user support
- No updates of transforms on server side

There are more than 70 transforms available in Maltego. The word transform refers to the information gathering phase of Maltego. One transform means that Maltego will only do one phase of information gathering.

To access Maltego from the Kali Linux menu, navigate to **Kali Linux** | **Information Gathering** | **OSINT Analysis** | **maltego** or you can use the console and type the following command:

```
# maltego
```

You will see the Maltego welcome screen. After several seconds, you will see the following Maltego start-up wizard that will help you set up the Maltego client for the first time:


Welcome to Maltego!

Steps
1. Welcome
2. Login
3. Login result
4. Select transform seeds
5. Update transforms

Startup wizard - Welcome (1 of 5)

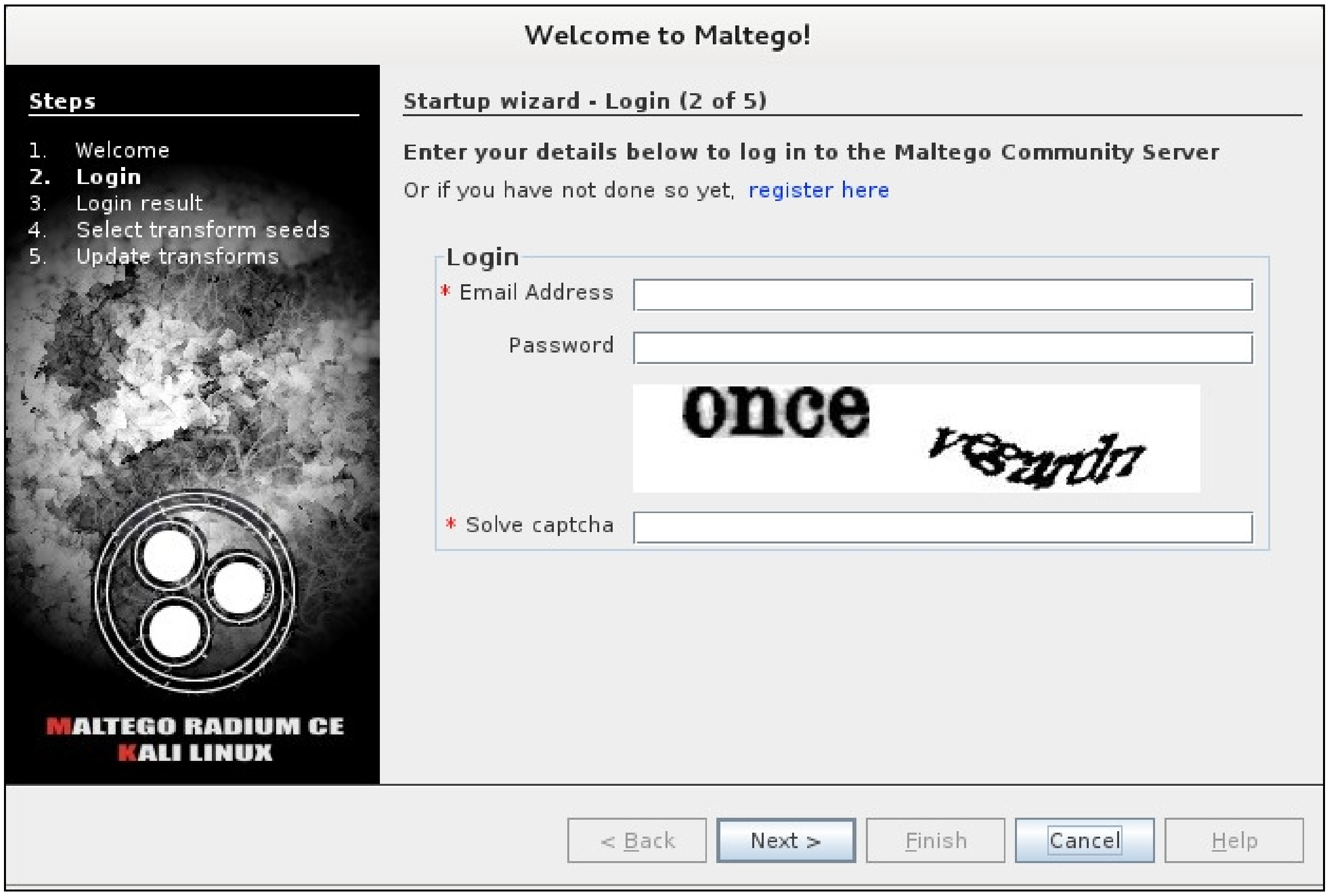
Welcome to Maltego!

This wizard will guide you through the steps of setting up your Maltego Client for first use.

We hope that you enjoy using our product as much as we enjoy building it!

Please note that the Community Edition is intended for non-commercial use only!

Click on **Next** to continue to the next window as shown in the following screenshot:


Welcome to Maltego!

Steps
1. Welcome
2. Login
3. Login result
4. Select transform seeds
5. Update transforms

Startup wizard - Login (2 of 5)

Enter your details below to log in to the Maltego Community Server

Or if you have not done so yet, register here

Login

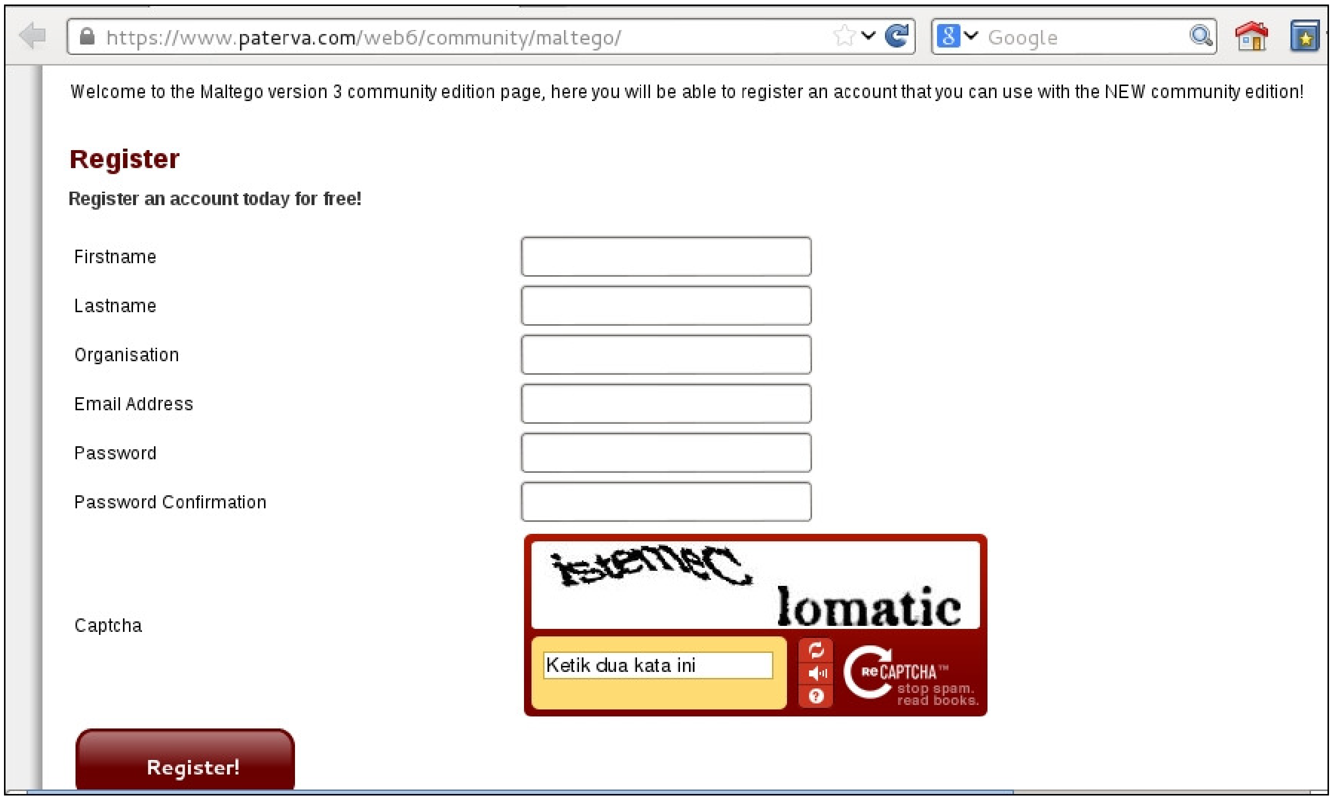
* Email Address

Password

* Solve captcha

In this window, you need to enter your login information to the Maltego community server. If you don't have the login information, you need to register yourself first by clicking on the **register here** link.

The following screenshot shows the **Register** page:



https://www.paterva.com/web6/community/maltego/

Welcome to the Maltego version 3 community edition page, here you will be able to register an account that you can use with the NEW community edition!

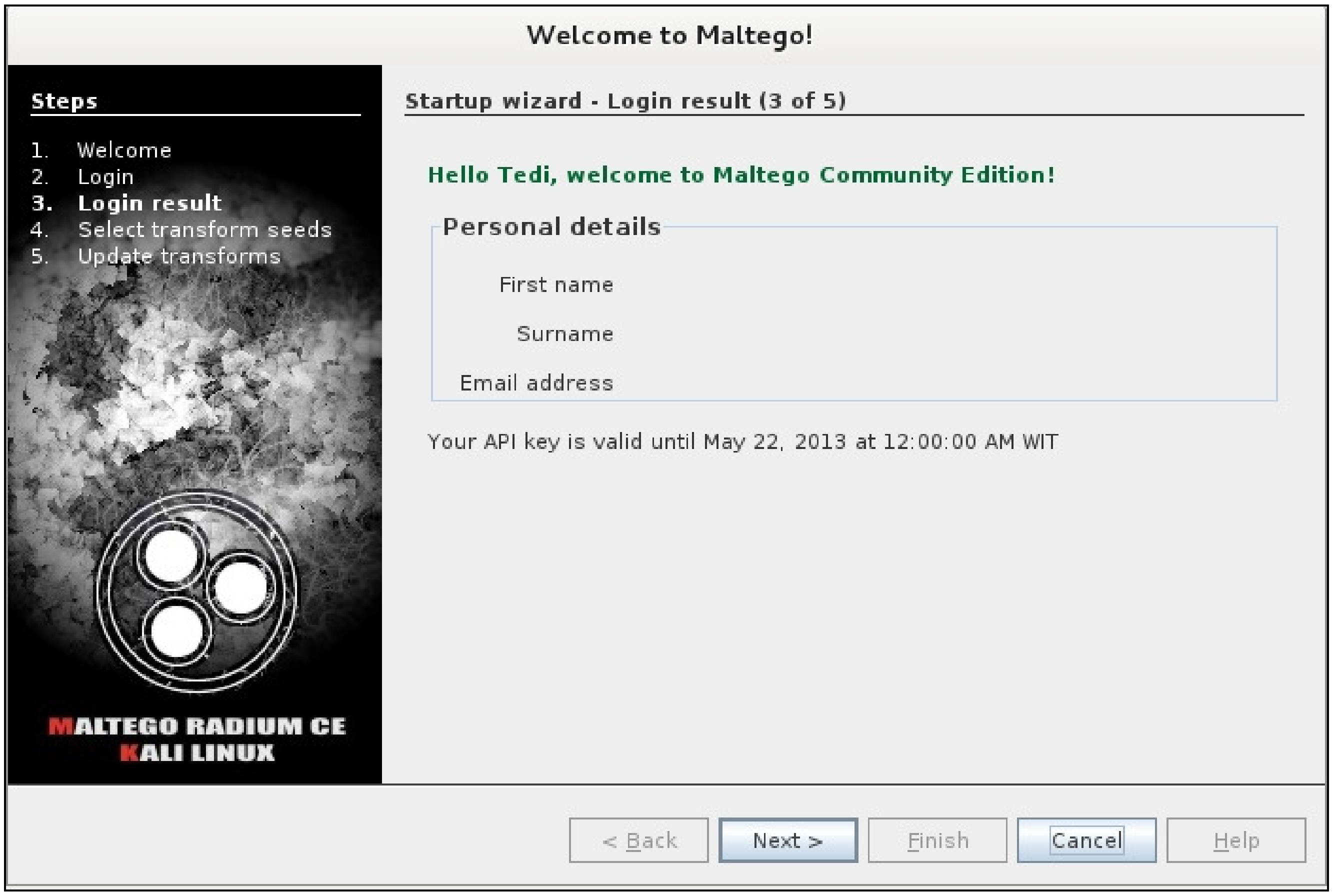
Register

Register an account today for free!

Firstname	
Lastname	
Organisation	
Email Address	
Password	
Password Confirmation	
Captcha	Ketik dua kata ini

You need to fill in your details into the corresponding fields provided, and click on the **Register!** button to register.

If you already have the login details, you can enter them in the fields provided. When the login information is correct, the following information will be displayed:



Welcome to Maltego!

Steps

1. Welcome
2. Login
3. **Login result**
4. Select transform seeds
5. Update transforms

Startup wizard - Login result (3 of 5)

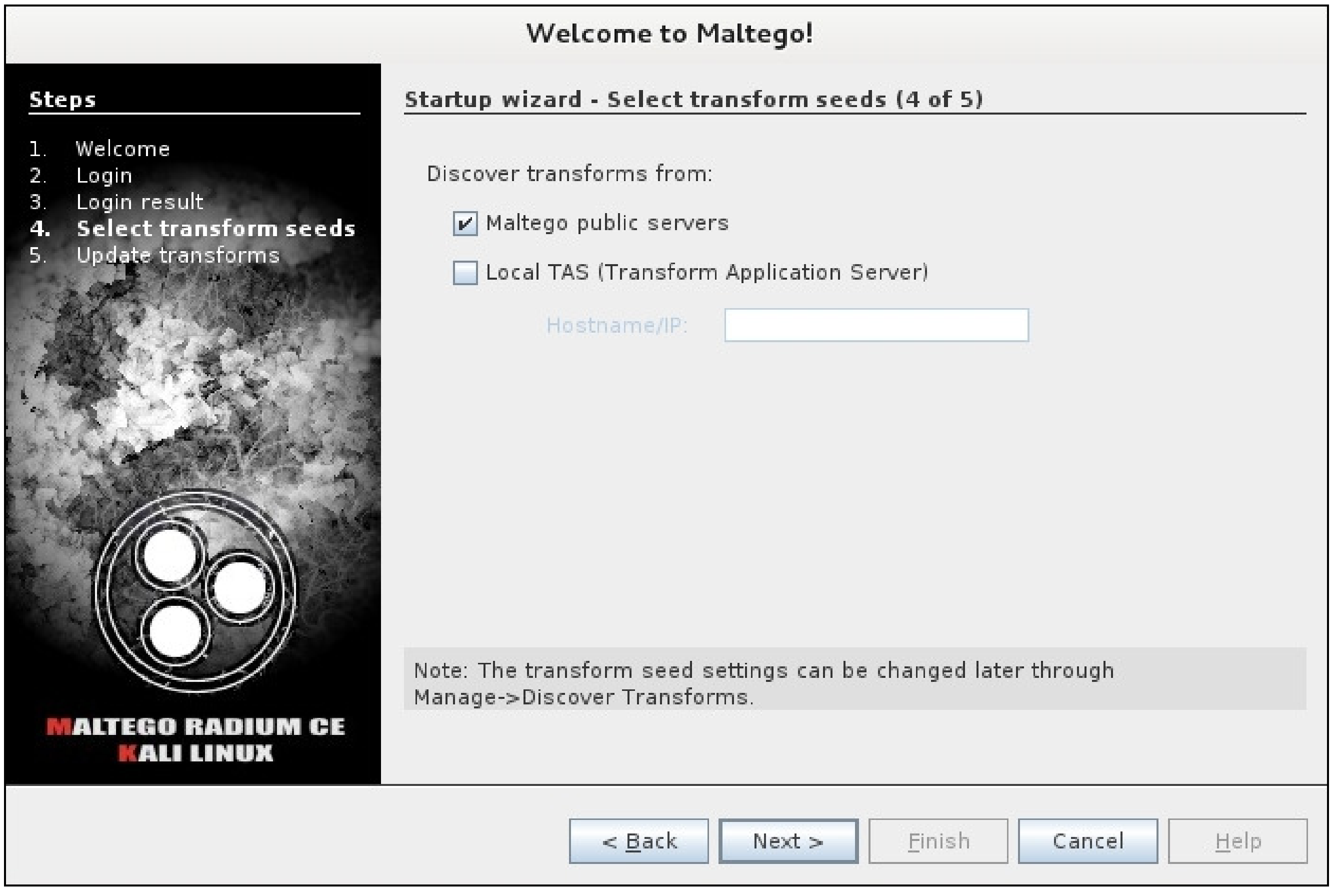
Hello Tedi, welcome to Maltego Community Edition!

Personal details

First name	
Surname	
Email address	

Your API key is valid until May 22, 2013 at 12:00:00 AM WIT

You will then need to select the transform seeds as shown in the following screenshot:


Welcome to Maltego!

Steps

1. Welcome
2. Login
3. Login result
4. **Select transform seeds**
5. Update transforms

Startup wizard - Select transform seeds (4 of 5)

Discover transforms from:

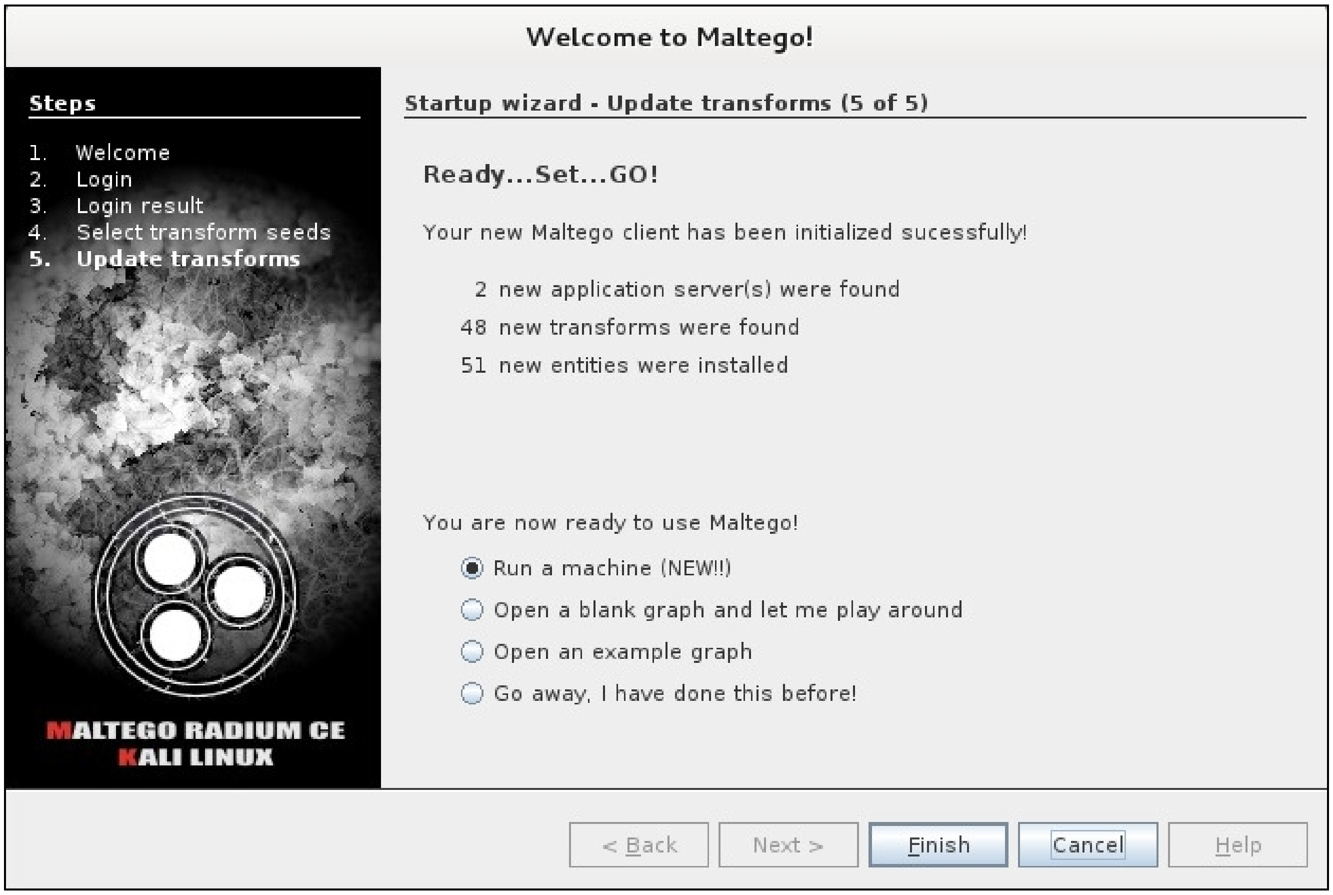
[✓] Maltego public servers

[ ] Local TAS (Transform Application Server)

Hostname/IP:

Note: The transform seed settings can be changed later through Manage->Discover Transforms.

The Maltego client will connect to the Maltego servers in order to get the transforms. If Maltego has been initialized successfully, you will see the following screenshot:


Welcome to Maltego!

Steps

1. Welcome
2. Login
3. Login result
4. Select transform seeds
5. **Update transforms**

Startup wizard - Update transforms (5 of 5)

Ready...Set...GO!

Your new Maltego client has been initialized sucessfully!

```
 2  new application server(s) were found
48  new transforms were found
51  new entities were installed
```

You are now ready to use Maltego!

● Run a machine (NEW!!)

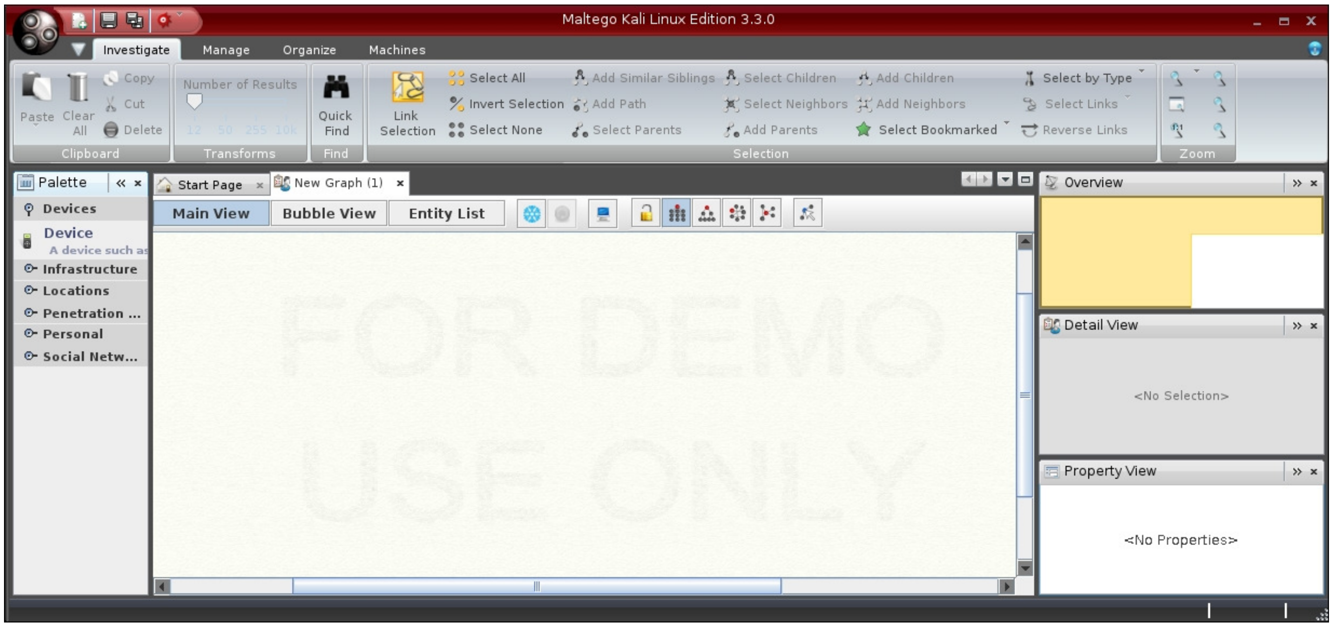
○ Open a blank graph and let me play around

○ Open an example graph

○ Go away, I have done this before!

This means that your Maltego client initialization has been done successfully. Now you can use the Maltego client.

Before we use the Maltego client, let's first see the Maltego interface:



On the top-left side of the preceding screenshot, you will see the **Palette** window. In the **Palette** window, you can choose the entity type for which you want to gather the information. Maltego divides the entities into six groups as follows:

- **Devices** such as phone or camera
- **Infrastructure** such as AS, DNS name, domain, IPv4 address, MX record, NS record, netblock, URL, and website
- **Locations** on Earth
- **Penetration testing** such as built with technology
- **Personal** such as alias, document, e-mail address, image, person, phone number, and phrase
- **Social Network** such as Facebook object, Twitter entity, Facebook affiliation, and Twitter affiliation

In the top-middle of the preceding screenshot, you will see the different views: **Main View**, **Bubble View**, and **Entity List**. Views are used to extract information that is not obvious from large graphs—where the analyst cannot see clear relationships by manual inspection of data. **Main View** is where you work most of the time. In **Bubble View**, the nodes are displayed as bubbles, while in the **Entity List** tab, the nodes are simply listed in text format.

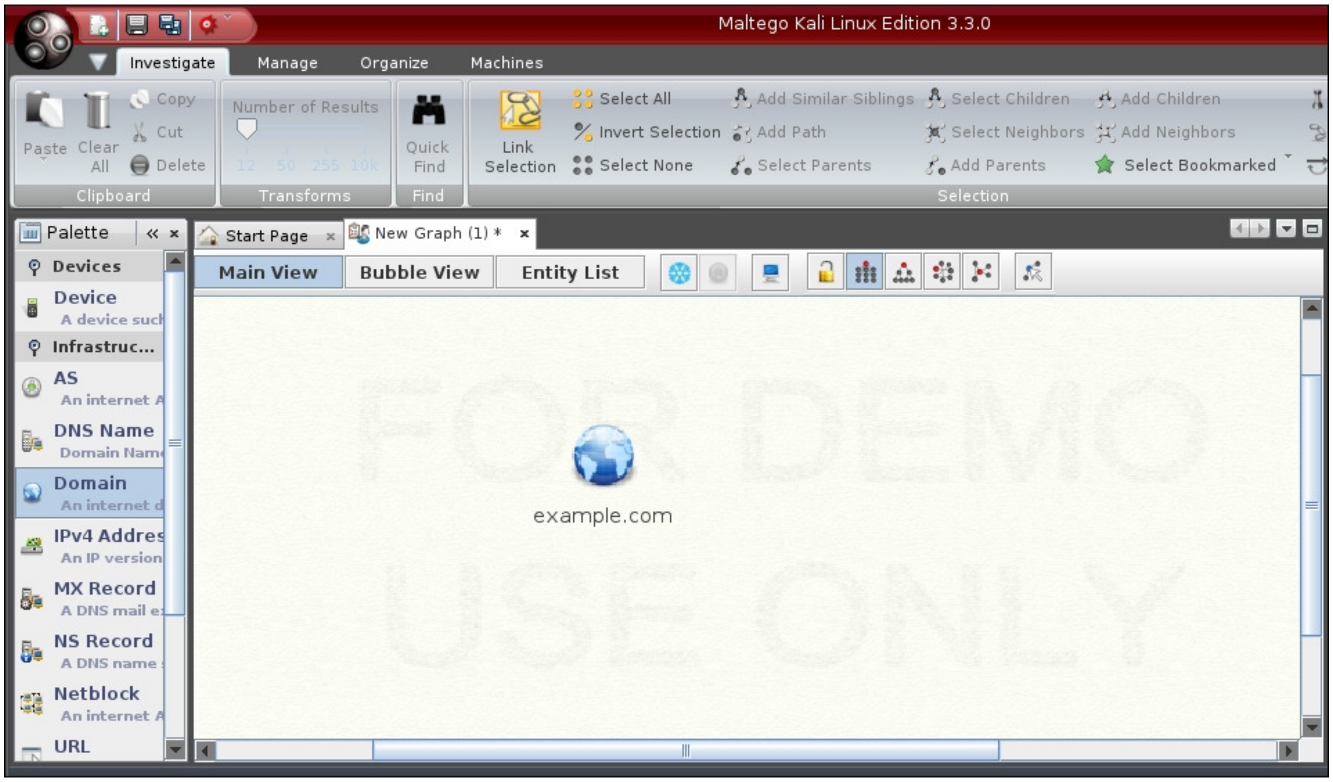
Next to the views, you will see different layout algorithms. Maltego supports the following four layout algorithms:

- **Block layout**: This is the default layout and is used during mining
- **Hierarchical layout**: Think of this as a tree-based layout, such as a file manager
- **Centrality layout**: Nodes that are the most central to the graph (for example, most incoming links) appear in the middle, with the other nodes scattered around it
- **Organic layout**: Nodes are packed together tightly in such a way that the distance between each node and all the other nodes is minimized

After a brief description of the Maltego client user interface, it's time for the action.

Let's suppose you want to gather information about a domain. We will use the domain `example.com` for this example. We will explore how to do this in the following sections.

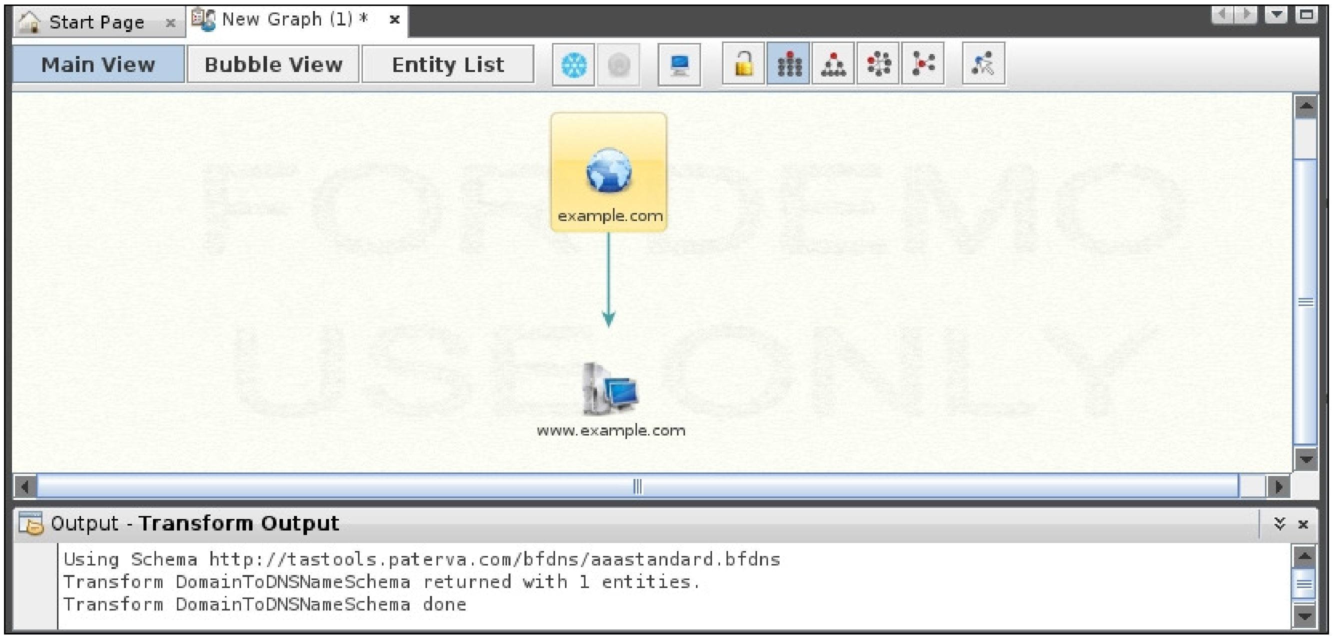
Create a new graph (*Ctrl* + *T*), go to the **Palette** tab, select **Infrastructure**, and click on **Domain**. Drag it to the main window. If successful, you will see a domain called **paterva.com** in the main window. Double-click on the name and change it to your target domain, such as `example.com` , as shown in the following screenshot:



If you right-click on the domain name, you will see all of the transforms that can be done to the domain name:

- DNS from domain
- Domain owner's details
- E-mail addresses from domain
- Files and documents from domain
- Other transforms, such as To Person, To Phone numbers, and To Website
- All transforms

Let's choose **DomainToDNSNameSchema** from domain transforms (**Run Transform** | **Other Transforms** | **DomainToDNSNameSchema**). The following screenshot shows the result:



```
Using Schema http://tastools.paterva.com/bfdns/aaastandard.bfdns
Transform DomainToDNSNameSchema returned with 1 entities.
Transform DomainToDNSNameSchema done
```

After the **DNS from Domain** transform, we got information on the website address (**www.example.com**) related to the **example.com** domain.

You can run other transforms to the target domain.

If you want to change the domain, you need to save the current graph first. To save the graph, click on the Maltego icon, and then select **Save**. The graph will be saved in the Maltego graph file format (`.mtgx`). To change the domain, just double-click on the existing domain and change the domain name.

Next, we will describe several tools that can be used for getting route information.