WhoisXML API Now Offers 6 Files for its DNS Database Download Service

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WhoisXML API made its DNS database download available in six different files, each for different DNS record types. Doing so makes the DNS database files easier to integrate and analyze and enables particular use cases.

The resource records you can download as database files are:

- **A records:** An A record directs a domain or subdomain to an IP address. It is possibly the most basic type of DNS record, as all domains should resolve to an IP address to become accessible.
- **Mail exchanger (MX) records:** This type of record specifies the mail server where email messages meant for a specific domain are accepted.
- **Nameserver (NS) records:** The NS record determines the authoritative DNS server for the domain name.
- **Text (TXT) records:** This type of DNS record was initially allotted for human-readable information about a domain that serves as notes for administrators. Its use has, however, evolved to include serial numbers, codes, and server names.
- **Canonical name (CNAME) records:** A CNAME allows website administrators to provide aliases to domain names by pointing them to another domain. The domain blog[.]example[.]com, for example, can be given the alias or CNAME example[.]com.
- **Start of Authority (SOA) records:** SOA records contain administrative details about a particular domain's zone. This record helps manage zone transfers and contains the primary nameserver, serial numbers, and timestamps.

This tutorial looks into the six types of DNS databases now available for download.

How to Access DNS Database Download

Accessing WhoisXML API's DNS databases requires a subscription. To get started, contact us or send an email to sales@whoisxmlapi.com. If you already have an account, follow the steps below.

- Go to https://reverse-ip.whoisxmlapi.com/database.
- Click the "Order database" button.

- On the list of subscribed data feeds that appears, select DNS Database Download.

Directory of https://reverse-ip.whoisxmlapi.com/datafeeds/

```
Login successful.

           4 Nov 08  2019 All_Registered_Domains
       12288 Jun 14 16:59 DNS_Database_Download
         152 Oct 15  2019 Daily_Website_Contacts_and_Categorization
       36864 Jun 15 12:01 Disposable_Email_Domains
      331776 Jun 16 06:16 IP_Netblocks_WHOIS_Database
           9 Feb 24 17:03 Newly_Registered_Domains
        8192 Jun 16 05:00 Subdomains_Database
      233472 Jun 16 03:34 Typosquatting_DataFeed
```

- Select the type of DNS database you want to download. Clicking on a specific file name automatically starts the download.

Understanding the File Naming Conventions

The databases follow this file naming format: dns_[record type]_database.[date].[file type].csv.gz where:

- **Record type:** Refers to the resource record found in the database, such as A, SOA, TXT, NS, MX, or CNAME. For the DNS A Database, this field is left blank, so the name becomes dns_database.
- **Date:** The date when the file was generated.
- **File type:** This field could be “full,” which means you will be downloading the entire database, regardless of date. It could also be “weekly.diff” or “monthly.diff,” which means it

only contains the new records found within the week or month specified.

```
2625498019 Jun 14 07:22 dns_mx_database.2021-06-14.full.csv.gz
  59897726 Jun 14 14:00 dns_mx_database.2021-06-14.weekly.diff.csv.gz
8950307007 May 17 12:30 dns_ns_database.2021-05-17.full.csv.gz
 161702626 May 18 07:09 dns_ns_database.2021-05-17.weekly.diff.csv.gz
8980382265 May 24 06:54 dns_ns_database.2021-05-24.full.csv.gz
 128101182 May 24 15:46 dns_ns_database.2021-05-24.weekly.diff.csv.gz
8951269464 May 31 07:24 dns_ns_database.2021-05-31.full.csv.gz
 109765467 May 31 16:23 dns_ns_database.2021-05-31.weekly.diff.csv.gz
8870237245 Jun 07 07:09 dns_ns_database.2021-06-07.full.csv.gz
 411809490 Jun 07 19:05 dns_ns_database.2021-06-07.monthly.diff.csv.gz
  30341533 Jun 07 18:04 dns_ns_database.2021-06-07.weekly.diff.csv.gz
8847911991 Jun 14 08:31 dns_ns_database.2021-06-14.full.csv.gz
 161458750 Jun 14 14:31 dns_ns_database.2021-06-14.weekly.diff.csv.gz
4036592957 May 18 13:48 dns_soa_database.2021-05-17.full.csv.gz
4416727316 May 24 05:27 dns_soa_database.2021-05-24.full.csv.gz
 814669103 May 24 15:21 dns_soa_database.2021-05-24.weekly.diff.csv.gz
4709084643 May 31 06:26 dns_soa_database.2021-05-31.full.csv.gz
 868944728 May 31 15:55 dns_soa_database.2021-05-31.weekly.diff.csv.gz
4709084643 Jun 07 06:14 dns_soa_database.2021-06-07.full.csv.gz
4709084643 Jun 07 18:55 dns_soa_database.2021-06-07.monthly.diff.csv.gz
        38 Jun 07 17:39 dns_soa_database.2021-06-07.weekly.diff.csv.gz
5023025555 Jun 14 06:53 dns_soa_database.2021-06-14.full.csv.gz
1036072321 Jun 14 14:12 dns_soa_database.2021-06-14.weekly.diff.csv.gz
3349652283 May 18 23:50 dns_txt_database.2021-05-17.full.csv.gz
4118093537 May 24 05:54 dns_txt_database.2021-05-24.full.csv.gz
3053675718 May 24 15:30 dns_txt_database.2021-05-24.weekly.diff.csv.gz
4707656441 May 31 06:26 dns_txt_database.2021-05-31.full.csv.gz
3101593871 May 31 16:05 dns_txt_database.2021-05-31.weekly.diff.csv.gz
4707656441 Jun 07 06:14 dns_txt_database.2021-06-07.full.csv.gz
4707656441 Jun 07 18:53 dns_txt_database.2021-06-07.monthly.diff.csv.gz
        38 Jun 07 17:40 dns_txt_database.2021-06-07.weekly.diff.csv.gz
5254562769 Jun 14 06:52 dns_txt_database.2021-06-14.full.csv.gz
3265770199 Jun 14 14:24 dns_txt_database.2021-06-14.weekly.diff.csv.gz
```

DNS Databases Available from WhoisXML API

The six types of DNS databases we offer are discussed in detail below. More information can also

be found here.

DNS A Database

Our DNS A Database contains the IP resolutions of domain names. These files are labeled “dns_database” on the main download page. The database has three columns, namely:

- **d:** Lists all domain names.
- **du:** The date and timestamp when the DNS record was last updated.
- **ips:** The IP addresses the domains resolve to. If a domain resolved to multiple IP addresses in the past, all these IP addresses are reflected in this column.

	A	B	C	D	E	F	G	H	I
1	DOMAIN	LAST_UPDATE_TIMESTAMP	IPS						
733	broadband-5-228-162-108.ip.moscow.rt.ru	1564119709	5.228.162.108						
734	b-group.site	1564118413	31.31.196.118						
735	biggboss11auditions2017.xyz	1564118836	219.94.224.112	49.212.124.161					
736	bestof-tgp.com	1564118705	195.56.193.78						
737	bedroomblinds.co.uk	1564118628	52.16.25.241						
738	blueponds.com	1564119086	45.56.111.241						
739	bestoflbi.buzz	1564118663	216.15.222.111						
740	biggirlproduction.net	1564118748	104.17.202.73	104.17.203.73	104.17.204.73	104.17.205.73	104.17.206.73		
741	b-internet.176.48.180.10.nsk.rt.ru	1564117719	87.239.45.231						
742	bko1908.com	1564118845	23.236.62.147						
743	broadband-188-32-112-12.ip.moscow.rt.ru	1564119689	188.32.112.12						
744	broadband-5-228-213-187.nationalcablenet	1564119641	193.227.240.131						
745	bonedrone.buzz	1564119193	184.168.221.55						

DNS MX Database

DNS MX Database lists domain names and their corresponding mail servers. The file names for this database type begins with “dns_mx_database,” and has four columns:

- **d:** This column contains the domain names found for the selected date.
- **du:** The date and timestamp when the MX record was last updated is reflected here.

- **pr:** This refers to the priority or preference in which the specific mail server should be used, 1 being the highest priority and 100, the lowest. Setting mail server priority enables load sharing between primary and backup mail servers.
- **mx:** This column lists the mail server associated with the domain name.

	A	B	C	D	E	F
1	d	du	pr	mx		
9091	007kitchens.com	1608996526	10	mx00.1and1.com		
9092	007kitchens.com	1608996526	10	mx01.1and1.com		
9093	007kleening.com	1608996218	10	mx00.ionos.co.uk		
9094	007kleening.com	1608996218	10	mx01.ionos.co.uk		
9095	007kn.com	1607645896	10	mx156.hostedmxserver.com		
9096	007kush.com	1608996469	0	localhost		
9097	007lab.com	1608996183	1	localhost		
9098	007lab.com	1608996183	1	mx247.in-mx.com		
9099	007lab.com	1608996183	1	mx247.in-mx.net		
9100	007labs.co.uk	1608996272	10	mxs1.xsmtpserver.net		
9101	007labs.co.uk	1608996272	20	mxs2.xsmtpserver.net		
9102	007lan.com	1604016875	10	mx156.hostedmxserver.com		
9103	007laohujixiaoyouxi.cryy12(	1608996190	1	mail.happyisp.com		
9104	007laohujixiaoyouxi.zhycn.(	1608996170	1	mail.happyisp.com		
9105	007law.co.nz	1608996177	10	mx.partnerconsole.net		
9106	007law.co.nz	1608996177	20	mx4.partnerconsole.net		
9107	007leinuo.com	1608996400	10	mx156.hostedmxserver.com		
9108	007let.com	1608996423	5	mail.007let.com		
9109	007liaomendeduchang.pock	1607645642	1	mail.happyisp.com		
9110	007liaomendeduchang.zhar	1608996819	1	mail.happyisp.com		
9111	007licenseplate.com	1608996274	0	mail.007licenseplate.com		

DNS NS Database

This type of DNS database download helps you map out the NSs associated with a particular

domain name. The file names begin with “dns_ns_database,” and contain three columns:

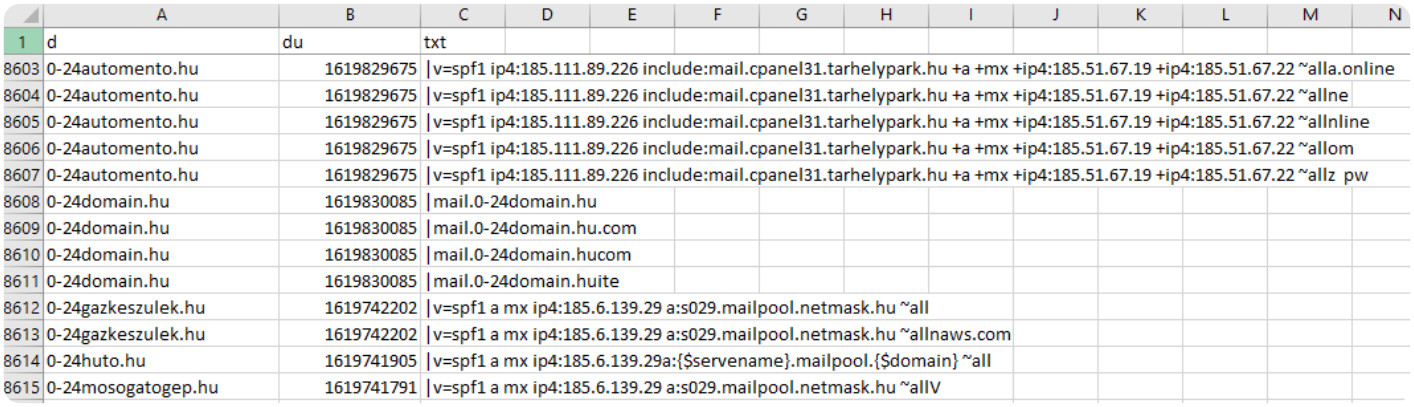
- **d:** Lists all domain names.
- **du:** Contains the date and timestamp of the last update made.
- **ns:** This column includes the NSs associated with the domains listed in the first column.

	A	B	C	D	E
1	d	du	ns		
658	0-163-129-45.customers.atlantis.it	1608996372	ns1.sedoparking.com		
659	0-163-129-45.customers.atlantis.it	1608996372	ns2.sedoparking.com		
660	0-169.com	1607646022	ns1.register.it		
661	0-169.com	1607646022	ns2.register.it		
662	0-169.com	1607646022	suspended1.plaindns.net		
663	0-169.com	1607646022	suspended2.plaindns.net		
664	0-18.dk	1608996211	ns01.servage.net		
665	0-18.dk	1608996211	ns02.servage.net		
666	0-18.dk	1608996211	ns03.servage.net		
667	0-18.dk	1608996211	ns04.servage.net		
668	0-18.dk	1608996211	ns05.servage.net		
669	0-185.biz	1608996286	ns10.wixdns.net		
670	0-185.biz	1608996286	ns11.wixdns.net		
671	0-186-138.nrttelecom.com.br	1608996430	ns1.nrttelecom.com.br		
672	0-186-138.nrttelecom.com.br	1608996430	ns2.nrttelecom.com.br		
673	0-18egitimdanismanlik.online	1608996664	ns1.natrohost.com		
674	0-18egitimdanismanlik.online	1608996664	ns2.natrohost.com		
675	0-18klinik.com	1608996398	ns1.natrohost.com		
676	0-18klinik.com	1608996398	ns2.natrohost.com		

DNS TXT Database

TXT records contain text information about the domain and may serve several purposes, including domain ownership verification and spam prevention. Our DNS TXT Database (signified by the string “dns_txt_database” in their names) has three columns, namely:

- **d:** This column lists the domain names.
- **du:** This refers to the date and timestamp when the TXT record was last updated.
- **txt:** Contains the TXT record detail specified by the domain administrator. If a domain has multiple TXT records, each one is displayed in a different row.



	A	B	C
1	d	du	txt
8603	0-24automento.hu	1619829675	|v=spf1 ip4:185.111.89.226 include:mail.cpanel31.tarhelypark.hu +a +mx +ip4:185.51.67.19 +ip4:185.51.67.22 ~alla.online
8604	0-24automento.hu	1619829675	|v=spf1 ip4:185.111.89.226 include:mail.cpanel31.tarhelypark.hu +a +mx +ip4:185.51.67.19 +ip4:185.51.67.22 ~allne
8605	0-24automento.hu	1619829675	|v=spf1 ip4:185.111.89.226 include:mail.cpanel31.tarhelypark.hu +a +mx +ip4:185.51.67.19 +ip4:185.51.67.22 ~allnline
8606	0-24automento.hu	1619829675	|v=spf1 ip4:185.111.89.226 include:mail.cpanel31.tarhelypark.hu +a +mx +ip4:185.51.67.19 +ip4:185.51.67.22 ~allom
8607	0-24automento.hu	1619829675	|v=spf1 ip4:185.111.89.226 include:mail.cpanel31.tarhelypark.hu +a +mx +ip4:185.51.67.19 +ip4:185.51.67.22 ~allz pw
8608	0-24domain.hu	1619830085	|mail.0-24domain.hu
8609	0-24domain.hu	1619830085	|mail.0-24domain.hu.com
8610	0-24domain.hu	1619830085	|mail.0-24domain.hucom
8611	0-24domain.hu	1619830085	|mail.0-24domain.huite
8612	0-24gazkeszulek.hu	1619742202	|v=spf1 a mx ip4:185.6.139.29 a:s029.mailpool.netmask.hu ~all
8613	0-24gazkeszulek.hu	1619742202	|v=spf1 a mx ip4:185.6.139.29 a:s029.mailpool.netmask.hu ~allnaws.com
8614	0-24huto.hu	1619741905	|v=spf1 a mx ip4:185.6.139.29a:{$servename}.mailpool.{$domain} ~all
8615	0-24mosogatogep.hu	1619741791	|v=spf1 a mx ip4:185.6.139.29 a:s029.mailpool.netmask.hu ~allV

DNS CNAME Database

Website administrators can make multiple domains and subdomains point to the same application or page within the same server by setting up CNAME records. Our DNS CNAME Database keeps track of such records to help you see which domains have CNAME records and what domains they point to.

This type of database has the string “dns_cname_database” in their names and has three columns:

- **d:** This column lists all domain names.
- **du:** Contains the date and timestamp when the CNAME record was last updated.

- **cname:** Lists the domain that the corresponding domain identified in the first column points to.

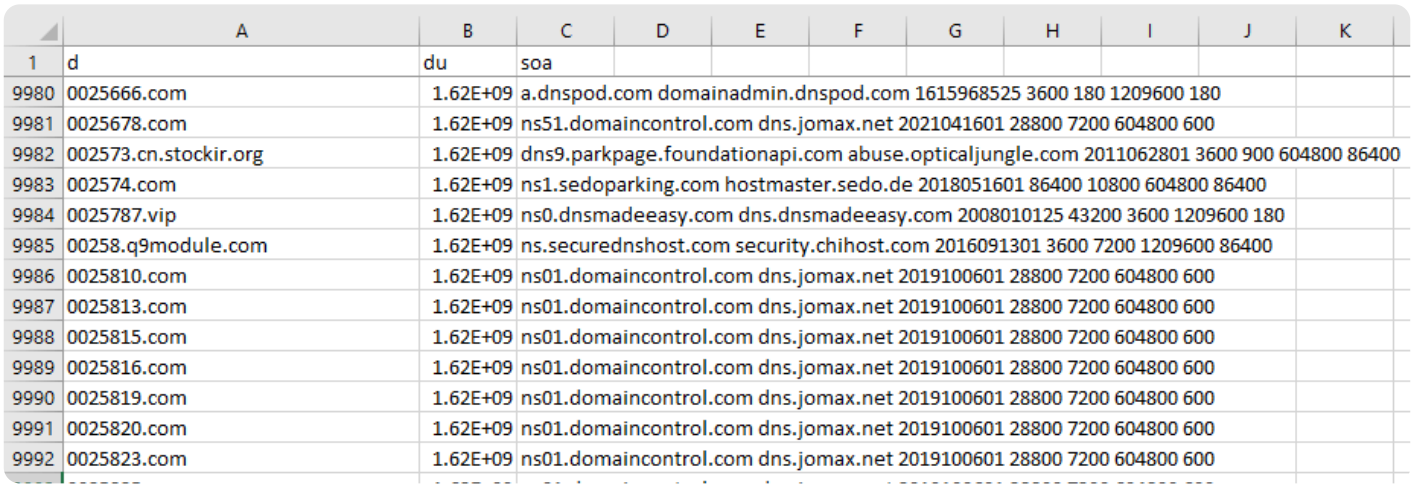
	A	B	C	D
1	d	du	cname	
160	0-171-118-80.escort.fr	1619741872	escort.fr	
161	0-171.rkcom.net	1619742051	comtrance.net	
162	0-172.rkcom.net	1619741946	comtrance.net	
163	0-173-227-188.rackcentre.redsta	1619741874	redstation.com	
164	0-174.rkcom.net	1619742711	comtrance.net	
165	0-176-227-188.rackcentre.redsta	1619742092	redstation.com	
166	0-177-243-80.rackcentre.redstati	1619741733	redstation.com	
167	0-177.rkcom.net	1619741774	comtrance.net	
168	0-178-243-80.rackcentre.redstati	1619741943	redstation.com	
169	0-178.rkcom.net	1619741789	comtrance.net	
170	0-179-227-188.rackcentre.redsta	1619742033	redstation.com	
171	0-18-200-109.rackcentre.redstati	1619742371	redstation.com	
172	0-18.com.pagesstudy.com	1619741859	pagesstudy.com	
173	0-18.gr.pagesstudy.com	1619741817	pagesstudy.com	
174	0-18.ru.pagesstudy.com	1619742032	pagesstudy.com	
175	0-180-227-188.rackcentre.redsta	1619741722	redstation.com	

DNS SOA Database

This type of database contains the SOA records of domain names that contain administrative details about the zone. File names start with “dns_soa_database,” and files have three columns:

- **d:** Refers to the domain names in the database.

- **du:** This column contains the date and timestamp when the SOA record was last updated.
- **soa:** Lists the SOA record associated with the domain indicated in the first column.



	A	B	C	D	E	F	G	H	I	J	K
1	d	du	soa								
9980	0025666.com	1.62E+09	a.dnspod.com domainadmin.dnspod.com 1615968525 3600 180 1209600 180								
9981	0025678.com	1.62E+09	ns51.domaincontrol.com dns.jomax.net 2021041601 28800 7200 604800 600								
9982	002573.cn.stockir.org	1.62E+09	dns9.parkpage.foundationapi.com abuse.opticaljungle.com 2011062801 3600 900 604800 86400								
9983	002574.com	1.62E+09	ns1.sedoparking.com hostmaster.sedo.de 2018051601 86400 10800 604800 86400								
9984	0025787.vip	1.62E+09	ns0.dnsmadeeasy.com dns.dnsmadeeasy.com 2008010125 43200 3600 1209600 180								
9985	00258.q9module.com	1.62E+09	ns.securednshost.com security.chihost.com 2016091301 3600 7200 1209600 86400								
9986	0025810.com	1.62E+09	ns01.domaincontrol.com dns.jomax.net 2019100601 28800 7200 604800 600								
9987	0025813.com	1.62E+09	ns01.domaincontrol.com dns.jomax.net 2019100601 28800 7200 604800 600								
9988	0025815.com	1.62E+09	ns01.domaincontrol.com dns.jomax.net 2019100601 28800 7200 604800 600								
9989	0025816.com	1.62E+09	ns01.domaincontrol.com dns.jomax.net 2019100601 28800 7200 604800 600								
9990	0025819.com	1.62E+09	ns01.domaincontrol.com dns.jomax.net 2019100601 28800 7200 604800 600								
9991	0025820.com	1.62E+09	ns01.domaincontrol.com dns.jomax.net 2019100601 28800 7200 604800 600								
9992	0025823.com	1.62E+09	ns01.domaincontrol.com dns.jomax.net 2019100601 28800 7200 604800 600								

DNS Databases in Action: What Attacks Can They Help Prevent?

DNS Hijacking

DNS hijacking or redirection is a type of DNS attack where malicious actors change the victims' DNS settings to redirect them to malicious websites or applications. One example of malware that makes DNS hijacking possible is DNSChanger, which can replace a domain's NS with one that points to a malicious IP address.

DNS databases, specifically DNS NS and A Databases, can help you check which domains have possibly been redirected to malware-carrying IP addresses and NSs.

Malware

Aside from DNS hijacking, threat actors very often use malware, including ransomware, to carry

out attacks. Changing the DNS settings of a victim's computer may enable threat actors to plant data-stealing and -locking malware on their systems.

With a DNS database, security teams can check for domains that resolve to IP addresses associated with ransomware and other malware. For example, in the sample DNS A Database, three domains point to 50[.]63[.]202[.]39, an IP address cited for its involvement in ransomware and other malicious campaigns. These domains are:

- alextandang[.]com
- celltechsvcs[.]com
- youngswagclothes[.]com

The timestamps on the database can provide more context on associations between domains and the malicious IP address.

Spam Campaigns and Email Spoofing

TXT records can be used to enhance email security by making it a space for specifying Sender Policy Framework (SPF) records and Domain-Based Message Authentication, Reporting, and Conformance (DMARC) authentication. Blank TXT records or unspecified SPF records can make a domain vulnerable to spoofing and cause emails to be marked as spam.

We will continue to make our DNS database download services available in easily accessible and consumable formats. Our goal is to help cybersecurity teams, investigators, and researchers identify threats, uncover artifacts, and map out associations between malicious records.