Domain Registration Hell
and how to avoid it...

Let's start with a simple open-book (use any resources you have available) quiz. If you can't answer all of these questions with certainty you might be in for trouble...

1) What company hosts your web site?
1a) What is the username and password to access the account?
1b) What is the support email address if you need help?

2) What company is the registrar for your domain name
2a) What is the web address of the "control panel" to edit the domain record?
2b) What is the username and password to access the control panel?

3) When does your domain registration expire?

4) Who is listed as the admin contact for the domain?
4a) What email address is listed as the admin email for the domain?

5) Who is listed as the technical contact for your domain?

6) Is your domain locked?

The problem, for many small and medium size businesses and organizations is that they don't have all this information. What is worse, many don't even understand some of the questions. That can lead to big problems - especially if some of the key information isn't correct in the domain record. We will explain all of these items and how to obtain them later in this document.

Domains In Distress

If you don't yet know of someone that has experienced a problem with their domain, you're either new or have lucky friends... As much as we have all begin to rely upon the Internet for our business and make our web sites one of the forefronts of most business endeavours there are some big problems with a part of the process that should be simple and straightforward. First, here are a couple of horror stories (we'll look at the why and how behind them later):

"Rude Awakening!"

A Christian Private School web site owner arrived at school Monday morning and entered their school web address into their browser - only to be greeted with a page full of pornographic advertising! After several frantic emails and phone calls it was found that the domain had expired and the registrar (which was not the one they had initially signed up with) had swapped the school's site with porn advertising. They eventually got it back, but it took over 48 hours.

"The Old Switch-A-Roo"

By freak chance someone from a larger organization looked up their domain registration record and found - to their horror - that the domain was listed as belonging to their competitor. In fact, it was now registered by a completely different registrar. No-one had approved the transfer or knew anything about how it had happened. Again, they eventually got it back - but it took 2 weeks.

So how did this happen? In both cases the root cause can be traced back, in-part, to a failure by the respective organizations to keep track of their domain and the information in their domain registration record.

Some Background

To really make sense of the domain registration system it is critical to have a basic understanding of the different players involved when a web site is 'set loose' upon the Internet. In many cases some of these roles are performed by the same person or company - but understanding what part they all play is key.

Owner - The owner of the web site ie: they pay for it.
Site Manager - Responsible for keeping the content of the site up-to-date.
Designer/Developer - Responsible for designing and building the site.
Domain Registrar - Responsible for holding and administering the domain record.
Host - Provides space for the site (perhaps a database, mail server, and other server services)
ISP - Provides the end-user with access to the Internet.

Most professionally designed sites involve completely different entities for each of these roles, where personal sites sometimes are entirely serviced by one provider - it all depends. Here are two examples:

PawPrint.net (our own site)
> Owner: PawPrint.net
> Site Manager: A PawPrint.net employee
> Designer/Developer: PawPrint.net
> Domain Registrar: netscout.com
> Host: PawPrint.net - dedicated server
> ISP: varies by client

ccga-pacific.org
> Owner: The Canadian Coast Guard Auxiliary - Pacific (CCGA-P)
> Site Manager: A CCGA-P employee
> Designer/Developer: PawPrint.net
> Domain Registrar: Public Interest Registry
> Host: QCIslands.Net
> ISP: varies by client

Notice how in both cases the host and the registrar are different companies.

Common Misconception #47:
My web designer does all that 'stuff'... Extremely few web design firms actually host or register domains - many, however, resell the services of others - so effectively if you have your domain, hosting, and design all with a single firm - not only are you placing all your eggs in one basket - you are also, most likely, paying the markup of a middle-man and in some cases relinquishing control of your domain to your designer.

Role break down

Lets examine each of the roles in more detail:

The Owner and Site Manager roles are fairly straightforward. For many small businesses the Owner and Site Manager are one in the same person, but for the issue at hand it makes little difference.

The Designer/Developer is the company you have hired to build the web site. PawPrint is an example of such a company. The Designer/Developer will create the code for your web site, design the graphics, and in many cases upload it to the host when it's all finished. They may or may not be responsible for continued updates after the site launches.

The Domain Registrar is a company you have hired to keep your domain registration record. All they do is keep an entry in their database for your domain name and ensure that the root name servers are notified of any changes to that record. Ok, what is a domain and what are root name servers - we'll get to domains in a minute - root name servers are beyond our scope... Registrars will hold your domain record for a fixed period of time before it expires and they want you to pay them again - usually 1,2,5, or 10 years.

The Host is a company you pay for some space on a computer (the server) to store your web site. This usually includes access to a database, email server, and some kind of statistics reporting. The Host usually charges a monthly fee for this service.

The ISP is a company the provides connections for individual users (usually home users) to the Internet in general. This is usually via Cable Modem or ADSL these days and involves a monthly fee. Any single web site will be accessed by people using all kinds of different ISPs in many different countries.

The following diagram shows how it all fits together:
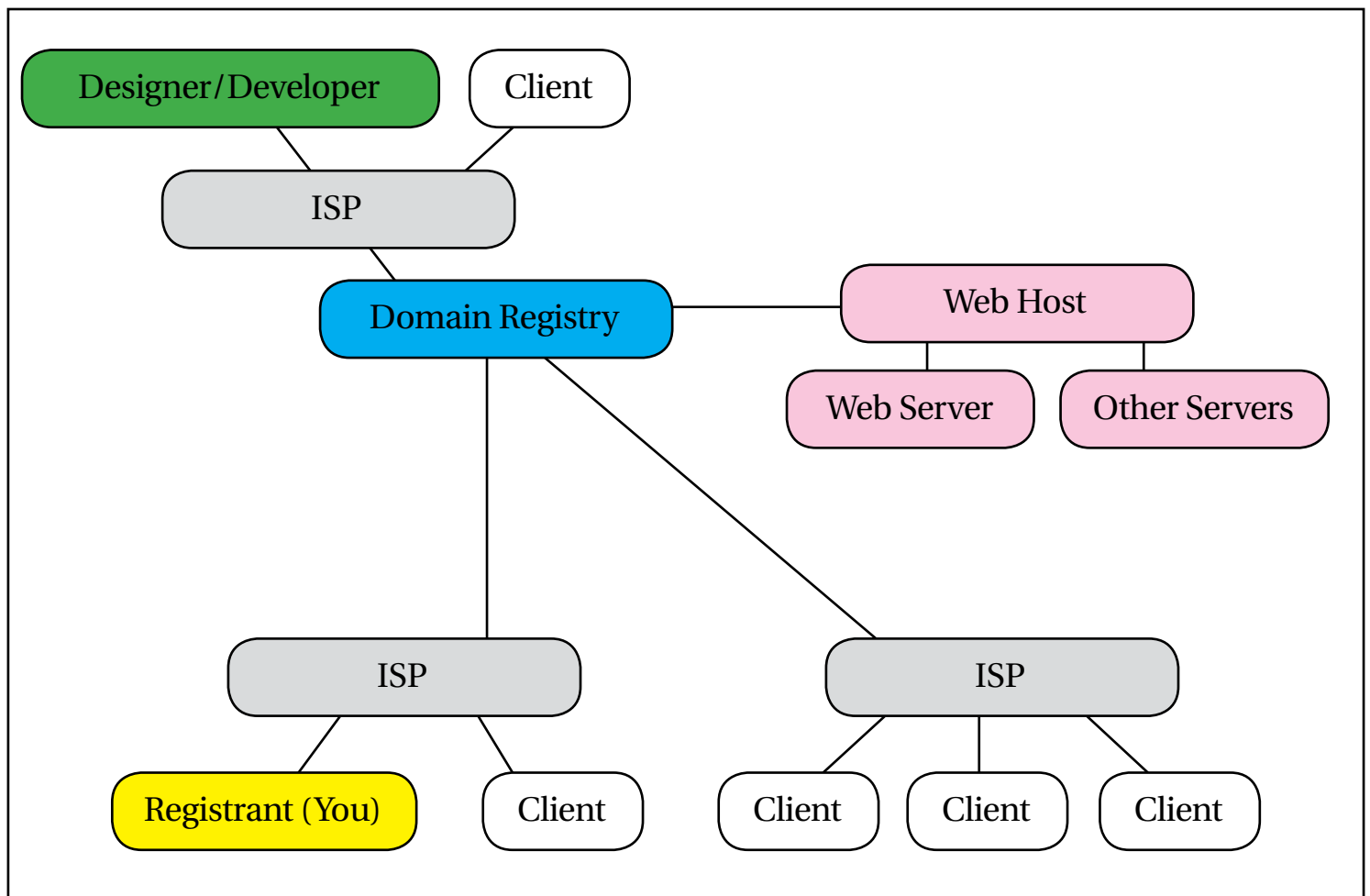
+1 604 885 7449
+1 888 4 WEB 360
4 9 3 2 360

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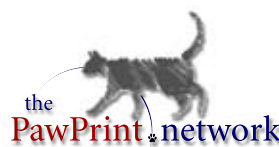
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What is a Domain

If we start with the premise that the Internet is basically a whole bunch of computers connected together, and further acknowledge the fact the all computers work only with numbers it seems obvious that in order for a human to type in something like "www.somewhere.com" and have a computer know what to do with that takes a conversion between the words "www.somewhere.com" and a number at some point. That number is an IP (Internet Protocol) address. It is this conversion that is precisely what domains and the DNS (Domain Name System) are for.

Here is an example: The nerd-news site www.slashdot.org is actually located at IP 66.35.250.151 (if you want to try something just type that IP address into your browser's address bar and see what happens) Now it's fairly easy for a human to remember "slashdot.org" but trying to remember that IP address is no where near as "friendly" So we invented the concept of a addresses to give us words that point to the numeric address. Since we need to ensure that all these addresses are unique across the entire Internet - the words must be registered... thus domains, and the domain registrars.

More On Domain Registrars (and some history)

Back in the good-old-days when the Internet was just a kid (around 1991) there was only one registrar. It was called Internic and was responsible for all the domain registrations for .com, .net and .org domains. It was not-for-profit and answerable to the US Government. Another important entity is ICANN (The Internet Corporation for Assigned Names and Numbers) The government in it's infinite wisdom chose to open up the domain registry and allow companies to sell domain registration as a service. In 1998 the non-profit organization ICANN was created by the US government with the sole purpose of turning the government-run Internet system into a global commercial entity. Internic, at that point, became the company Network Solutions, and ICANN was charged with the task of assigning a limited number of "Accredited registrar" titles to various companies across the Internet and that's when the fun started.

Domains go AWOL, businesses see their entire email systems vanish overnight, voluntary organizations are helpless to remove pornography from their homepage. Why? Those involved - and implicated - is such situations argue that the sudden loss of someone's domain is a rare occurrence, an inevitable but unfortunate symptom of the hundreds of thousands of domains bought, sold, and transferred every day. Perhaps it is. But that does not explain why the companies which make millions, every year from dealing in domains are continuing to drag their feet over simple changes to the system that would offer their customers a decent level of security. The truth is they have no real reason to make any changes. In fact, by maintaining the system in its current flawed state, many stand to gain financially by offering premium services which tape over the holes. And they need not worry about being sued by anyone who falls into those holes, because the courts have decided that the registrars are not legally responsible for any errors, even when they admit they have caused them. Scared yet?

As I visited the ICANN web site today there are 665 accredited registrars listed. There are probably several hundred thousand companies on the Internet offering domain registration services by being re-sellers of these 665, and probably several hundred thousand more who are re-sellers of the re-sellers. With a reasonable domain registration costing $15 / year and the estimated number of domains on the Internet at close to 85 billion - you do the math... it's a fairly lucrative business!

But enough of the history and structure - let's look at the technology:
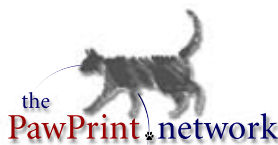
The Domain Record

So what exactly is it that these domain records contain, and how is access to that information controlled? Most of the record is taken up with names and addresses of who owns the domain and who is responsible for it. There is a small section that contains the list of "name servers" that actually do the word-to-number translation for the IP address. Finally there is an expiration date, some status information and that is about it... what do you want for $15/year?

The name servers are really the key technological part. Change the name servers and you can change where the domain "points" and it is really this information that it is so important to protect. Remember the story about the Christian School... in that case all that happened is that the name servers for their domain were changed to point the domain to the porn advertising. When they finally got control of their domain, the servers were just pointed back to the school's web server again. Usually the name servers for a web site will be provided by the hosting company. The designer/developer usually will know what they should be as well.

All the rest of the information about the domain is really there to keep track of the owner, ensure the registrar can charge their fee once every so often and to control access to the record. The Names and Addresses are split into several "Contacts"

>The Registrant/Admin Contact - The owner of the domain - full access to change everything
>The Technical Contact - Access to change the name servers only
>The Billing Contact - Where the bills get sent - no access to make changes.

Common Misconception #132:
My web designer/host/registrar needs to be listed as the technical contact for my domain. Absolutely not - and don't trust anyone that tells you so. Some organizations elect to put their web designer/developer in as the technical contact but you are far better off not doing this. The technical contact can change your name servers - There is no need to relinquish that level of control to someone outside your organization. If you don't know how to update your own name servers - it's time to learn!


Domain Status

There are several different domain status conditions (a complete list and description is included at the end of this document) For now, only two status conditions are of interest: Active and Registry Lock. In both these states a domain is active and registered and should be working. The big difference is that the locked domain can't (in theory) be transferred to another registrar or have any of the contact information changed until it is unlocked. This is great in theory - but it all relies upon the fact that all the registrars respect this condition and we all know - no Internet based company would ever do anything untoward... (remember: there are hundreds of thousands of re-sellers and then re-sellers of the re-sellers) no rule breaking - ya right!
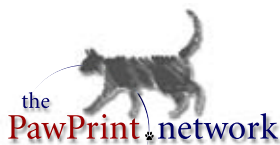
The Good, The Bad, and the Ugly

So now it all comes down to the registrars (you know, the ones that aren't legally responsible but stand to make the big bucks and police themselves) As you have certainly guessed by now - this system simply doesn't always work.

Good registrars do respect the rules, and will do their best to help their customers in the event that something goes wrong. They send loads of renewal reminder notices (usually close to 15 before a domain expires - and some even send more after the fact). They don't charge extra for locking the domain and generally are honest and upstanding eBusinesses.

Bad registrars tend to either over or under-charge, provide limited or no customer service, and may or may not even offer the lock feature. They are more concerned with their profits then their customers and basically reap in the bucks and don't do much else. But - they still follow the rules.

The Ugly registrars are a whole different breed. They usually charge exorbitant rates (some upwards of $90/year for a single domain) They provide no customer service, actively try to hoodwink customers into transferring their domains through various tricks (usually involving clauses in the fine print and/or mail-outs) and the most certainly don't play by the rules. Some even register the domain in their own name and then hold the customer at ransom after the first year in order to keep it (cases of rates in excess of $250 to renew have been noted)

And now the big question, how do you tell the good, the bad, and the ugly apart... good question! All you can really do is lots of serious research. Talk to people, get testimonials, and don't look for either bottom or top price. Think of the process a bit like choosing a contractor to do a renovation on your home. Don't just run out and grab the first registrar that comes up in a search - test the waters first and once you have a company in mind - search specifically for reviews of that company before you proceed.

The Transfer Process

Ok, so you have your domain and you want to switch to another registrar (or someone is trying to steal your domain name) In both cases a Transfer Request must be initiated at the registrar where the domain is supposed to end up (called the Gaining Registrar) This Gaining Registrar is then responsible for getting permission to complete the transfer. If the domain is locked they are supposed to stop straight away. If it isn't locked they send an email to whomever is listed as the "Admin Contact" and request permission (more on this in a second) If they get permission then they will update the record listing their company as the new Registrar and the transfer is complete (it takes a few hours to percolate down through the DNS system - a distributed database spread across the world)

So as an Administrative Contact you simply approve any transfers you want (usually the ones you initiated yourself) and deny the ones you don't right - unfortunately it's not that simple. Remember where the Gaining Registrar needs to "get permission" unfortunately this doesn't say that they must get a positive response back. Some of the registrars send an email that says "this transfer will go through unless you specifically reply and cancel it" in other words - if you don't do something they are going to assume you are giving your permission. Let's take this one tiny step further... let's just say you haven't exactly kept your contact information up-to-date in your domain record and your email address has changed. In this case you never even get the message - which means you don't reply and say no - and thus POW! your domain is transferred and you don't know anything about it until you wake up Monday morning to porn advertising - yep, that's exactly what happened to the school from our first story.
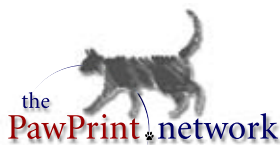
Now that's all assuming that we are dealing with registrars that are following the rules... Let's look at the last case again - but this time, we'll assume that the Gaining Registrar is one of the "Ugly" ones... Any guesses? yep, you got it - no email is ever sent to the admin. They just transfer it and when you call to complain they shrug their shoulders and say - "well, you never replied stating that you didn't want the transfer" Ouch! In fact, even if you do reply - the email might get "lost" (remember "Ugly" registrar) and you're still stuck.

Is it hopeless?

Now that you are cowering under the table worried that your domain might just disappear at any moment - don't worry there is solace - it's not hopeless! Here is the list of the most important things that you can do to ensure that you don't loose your domain:

1) Understand the System -

Knowledge is power, reading this article is a start - now is a good time to do more research on-line, the domain name system like almost all Internet technologies is very well documented on the net. The ICANN web site www.icann.org is a great place to start.

2) Know Your Providers and Passwords:

Make certain that you have all the access usernames and passwords for your web hosting, domains, and any other online services you use - keep them in a secure place and preferably in several places (use the form at the end to record them) This is especially true if you purchase a business and web site from someone - be sure to get all the usernames, passwords, and Urls - and check that they work!

3) Keep Contact Information Current:

Now that you know how important your domain contact information is, keeping it current - especially the admin email address - is critical.

4) Keep Your Domain Locked:

Unless you are in the middle of updating information or transferring your domain, there is no reason it shouldn't always be locked. Some registries (the .ca for example) do not provide this feature (they have a better system that requires you to login with your username and password to approve any change of information) but for all others keep it locked!

**5) Do Not Let Your Domain Expire:**

It sounds obvious - but keep an eye on the domain expiration date and be sure it never get's there. Most of the problems experienced with domains occur right before expiration, or when organizations accidentally let them expire.

6) Know Your Registrar

Know who your registrar is, and never respond to a message coming from some other company - especially through the postal mail - almost all registrars deal entirely via email. Several well known scams involve notices that look like renewal notices sent through the postal mail.
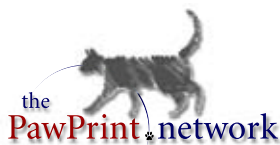
Resources and More Information

To look-up your domain record you need to do something called a "Whois search" there are many places to do this - here are two of many good sites:

      http://www.dnsstuff.com/
      http://www.networksolutions.com/whois/index.jsp

Monitor your domain status and expiration by checking the record or using a software tool like:

      http://www.domainpunch.com/products/domainstatus/

About the Author

Scott W. Baker B.A.Sc. is the President of PawPrint.net a leading web design firm specalizing in dynamic standards compliant web sites. He graduated from the Electrical Engineering programme at the University of British Columbia in 1995 with a speciality in communications. He is a self taught programmer and has been designing web sites since 1992. He has consulted for telecommunications companies across North America as a specialist in data network design and fibre-optic communications systems. He has presented several lectures on Internet Marketing strategies and provides consulting services for small, medium, and large public and private companies and government agencies.

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Web Site Access & Information Records

Date

Domain Information

Master Domain

Registrar

Expiration Date

Access URL

Username

Password

Alias Domains (Same account as above)

Domain

Expiration Date

Domain

Expiration Date

Domain

Expiration Date

Web Host Information

Provider

Support Phone#

Control Panel Access URL

Username

Password

Database Username

Database Password

Database Name

Web Designer/Developer

Provider

Phone#

Support email

Control Panel Access URL

Username

Password

Complete Domain Status Details

Below are the various domain status codes and a brief description of each (from RFC2832).

ACTIVE

This is the default status of a domain at registration time. The registry sets the domain to this status. The domain is modifiable by the registrar. The domain can be renewed. The domain SHALL be included in the DNS when in this status if the domain has at least one associated name server.

REGISTRY-LOCK

The registry sets the domain to this status. The domain cannot be modified or deleted by the registrar. The registry MUST remove the REGISTRY-LOCK status for the registrar to modify the domain. The domain can be renewed. The domain SHALL be included in the DNS when in this status if the domain has at least one associated name server.

REGISTRY-HOLD

The registry sets the domain to this status. The domain cannot be modified or deleted by the registrar. The registry MUST remove the REGISTRY-HOLD status for the registrar to modify the domain. The domain can be renewed. The domain SHALL NOT be included in the DNS when in this status.

REGISTRAR-HOLD

The registrar of the domain sets the domain to this status. The domain can not be modified or deleted when in this status. The registrar MUST remove REGISTRAR-HOLD status to modify the domain. The domain can be renewed. The domain SHALL NOT be included in the DNS when in this status.

REGISTRAR-LOCK

The registrar of the domain sets the domain to this status. The domain cannot be modified or deleted when in this status. The registrar MUST remove REGISTRAR-LOCK status to modify the domain. The domain can be renewed. The domain SHALL be included in the DNS when in this status.

REGISTRY-DELETE-NOTIFY

A domain is set on this status if it has expired and has child name servers that are hosting other domains. Only the registry may set this status. The domain SHALL be included in the DNS when in this status if the domain has at least one associated name server.
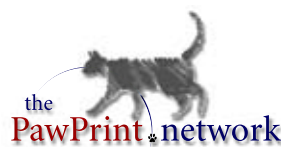
The domain deletion progresses through the following statuses.

REDEMPTIONPERIOD

A domain name is placed in REDEMPTIONPERIOD status when a registrar requests the deletion of a name that is not within the Add Grace Period. A name that is in REDEMPTIONPERIOD status will not be included in the zone file. A registrar can not modify or purge a name in REDEMPTIONPERIOD status. The only action a registrar can take on a name in REDEMPTIONPERIOD is to request that it be restored. Any other registrar requests to modify or otherwise update the domain will be rejected. Unless restored, the domain will be held in REDEMPTIONPERIOD status for a specified number of calendar days. The current length of this Redemption Period is thirty calendar days.

PENDINGDELETE

A domain name is placed in PENDINGDELETE status if it has not been restored during the Redemption Period. A name that is in PENDINGDELETE status will not be included in the zone file. All registrar requests to modify or otherwise update a domain in PENDINGDELETE status will be rejected. A domain name is purged from the registry database a specified number of calendar days after it is placed in PENDINGDELETE status. The current length of this Pending Delete Period is five calendar days.

PENDINGRESTORE

A domain name is placed in PENDINGRESTORE status when a registrar requests restoration of a domain that is in REDEMPTIONPERIOD status. A name that is in PENDINGRESTORE status will be included in the zone file. Registrar requests to modify or otherwise update a domain in REDEMPTIONPERIOD status will be rejected. A domain name is returned to REDEMPTIONPERIOD status a specified number of calendar days after it is placed in PENDINGRESTORE unless the registrar submits a complete Registrar Restore Report to the Registry Operator. The current length of this Pending Restore Period is seven calendar days.

Sample WHOIS Record (Google.com)

Registrant:

    Google Inc.
    (DOM-258879)
    Please contact *************@google.com
    1600 Amphitheatre Parkway Mountain View
    CA
    94043 US

    Domain Name: google.com

    Registrar Name: Markmonitor.com
    Registrar Whois: whois.markmonitor.com
    Registrar Homepage: http://www.markmonitor.com

Administrative Contact:
    DNS Admin
    (NIC-14290820)
    Google Inc.
    1600 Amphitheatre Parkway Mountain View CA
    94043 US
    *********@google.com +1.6506234000 Fax- +1.6506188571
Technical Contact, Zone Contact:
    DNS Admin
    (NIC-1340144)
    Google Inc.
    2400 E. Bayshore Pkwy Mountain View CA
    94043 US
    *********@google.com +1.6503300100 Fax- +1.6506181499

Created on...............: 1997-Sep-15.
Expires on...............: 2011-Sep-14.
Record last updated on..: 2006-Apr-10 16:15:58.

Domain servers in listed order:

NS3.GOOGLE.COM
NS4.GOOGLE.COM
NS1.GOOGLE.COM
NS2.GOOGLE.COM