

1.111B Class: An Alternative Class of .XYZ Domains to Foster Innovation and Creativity

XYZ
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Abstract. An inexpensive class of .xyz domains, made up of 1.111 billion possible 6-digit, 7-digit, 8-digit, and 9-digit numeric combinations, between 000000.xyz through 999999999.xyz, to introduce a new paradigm of innovation in the internet domain naming system (DNS). Despite their broad utility, domain names (e.g. xyz.com) are currently used primarily as addresses for websites or emails. Even if businesses or individuals were to use domains for other purposes, the annual cost to own a .com domain name is at least \$7.85 per year [1], barring registrar promotions, which may be cost-prohibitive when registered in bulk or renewed for multiple years. All .xyz domains in the 1.111B Class are \$0.65 wholesale per year, with a recommended to retail price of \$0.99 USD per year, to give businesses and individuals a first-of-its-kind class of domain names that can be used for alternative purposes, such as smart device tracking for the Internet of Things (IoT), advanced network communications, vanity digital identifiers, phone numbers and other personal identifiers, virtual currencies and tradable assets, or for other creative uses set out by registrants. Using a proprietary abuse-mitigation system developed by XYZ, which has resulted in less than 1% abuse from all active .xyz domains [2], the 1.111B Class will remain safe and reputable with even stricter anti-abuse regulations than standard .xyz domains.

1. Introduction

The internet itself is a platform to communicate, generate commerce, and drive innovation. Countless solutions have been developed to further these causes, ranging from IP addresses to instant messaging to connected home devices. While these solutions have been successful through their own means of communication, there is fragmentation in how this is done. The lowest-level means of identifying network devices had been IPv4 (e.g. 192.168.0.1), but all 4.3 billion possible combinations were assigned in early 2011 [3], and addresses now resell in auctions between \$10-\$15 USD each when purchased in bulk [4]. Even with the introduction of IPv6 (e.g. 2a03:2880:f10d:83:face:b00c::25de or 2400:cb00:2048:1::6818:1108), there are obvious limitations in terms of memorability and support.

The ubiquity and broad utility of domains make them a logical alternative to IP addresses as a primary means of reference. However, the historic annual cost to manage domains made them cost-prohibitive to scale, especially when considering there are already five times more IP addresses assigned in the United States than people [5]. Large-scale commercial operation of domains instead of IP addresses was unfeasible. With the introduction of the 1.111B Class, 6-digit through 9-digit .xyz domains can be inexpensively assigned on an as-needed basis for a wholesale cost of \$0.65 per year, with a recommended retail price of \$0.99 per year. All businesses and individuals already have access to domains through registrars and resellers, with at least basic knowledge of how to register and manage them. This noncommittal, low-overhead model of managing personalized unique identifiers through trusted channels make the financial and technical barrier

for entry to the 1.111B Class virtually nonexistent. The existing familiarity of domain management and other tools through registrars also give registrants the ability to use a 1.111B Class domain as more than just an identifier, as an IP address would serve, while also allowing settings customization on any device with internet access at any time.

2. Uses

In its most basic form, a domain name represents an IP address or series of IP addresses for a website or device. The benefit of any domain name is that it is customizable, more memorable, and offers more utility than an IP address. The same is true of all domains in the 1.111B Class. Any business or individual can visit a registrars website, such as www.GoDaddy.xyz, and search for any available 6-digit, 7-digit, 8-digit, or 9-digit .xyz domain name and use it at any time during the one year subscription period as a means to communicate with an internal or external network. In practice, this can be applied to as little as one domain name for individual purposes, such as for app testing or an internal wiki, or can be scaled for an entire network of devices. With the emergence of the Internet of Things (IoT), the 1.111B Class serves as a platform to easily and uniquely identify different devices, ranging from laptops to smart thermostats. In fact, registrants can even secure tens, hundreds, thousands to millions of domains in sequential order to create a block. These blocks can match device serial numbers or vehicle VIN numbers, then be used as portals for consumers to connect with their products, and for their products to receive updates from manufacturers.

Unlike IP addresses, the 1.111B Class is not limited to just devices. With the global acceptance of seven or more numeric digits as unique identifiers for individuals, such as phone numbers and QQ accounts, the 1.111B Class serves as an opportunity for individuals to create a uniform online identity that can be easily shared. These domains are also viable alternatives to SMS-based inquiry solutions. For example, instead of a property management sign directing visitors to text D13C2A to 1-310-555-1234 for more information about a unit, it could advertise more information on domains using a zip code and ID combination, such as 902108888.xyz or 902109999.xyz. 6-digit .xyz domains could also be hubs for special events, such as a wedding or birthday, using a MMDDYYYY format (e.g. 07042017.xyz or 20170704.xyz).

Historically, domains also carry market-driven value based on meaning, relevance, or scarcity. For example, the domain VacationRentals.com was acquired in 2007 for \$35 million USD [6]. Even seemingly meaningless numeric domains may hold value in the aftermarket, as illustrated by the sale of 118247.com for \$12,580 USD in 2006 [7]. In fact, a budding economy of investors, primarily in China, already exist who assign proprietary values to 6-digit .xyz domains that end in 88 [8]. To support these types of economies on a scalable and international level, the 1.111B Class allows the market of investors to assign values to these domains as assets and securely trade them with nominal transaction fees, similar to Bitcoin. Unlike Bitcoin, however, the 1.111B Class of .xyz domains can be easily managed through the existing registrar channel without requiring any kind of technical knowledge. Over time, the market may establish specific sets of the 1.111B Class as virtual currencies, based on patterns, scarcity, or other characteristics.

The primary purpose of introducing the 1.111B Class is to foster innovation through the accessibility of inexpensive domains. As a utilitarian tool, the uses for .xyz domains are mainly limited by the creativity of the people using them. With the exception of activities that violate the .xyz anti-abuse policy, there are no right or wrong ways to use the 1.111B Class of domains. Ultimately, there may be thousands of different types of usage with purposes varying greatly from what has been described in this section.

3. Registration and management

XYZ is the registry operator of the .xyz domain ending (also known as a top level domain or TLD). The registry's role is to wholesale .xyz domains to a global network of registrars, who then retail .xyz domains to their customers, the registrants. The final retail price paid by registrants is determined by each individual registrar, while XYZ's wholesale price of \$0.65 per year for domains in the 1.111B Class is fixed. XYZ maintains the passive database to allow any registrar that is accredited by the governing body of the internet, ICANN, to register and sell .xyz domains. Registrars, like GoDaddy and Network Solutions, are the delegated medium in which businesses and individuals can register, manage, renew, and transfer their domains and other products, such as hosting, website builders, email, and SSL certificates, through intuitive customer account centers. In some cases, registrars also have networks of resellers, which may act as specialty retailers by essentially licensing the registrars ICANN accreditation.

The process of registering a domain is standardized across all accredited registrars and resellers. Domains ending in .xyz, such as YourName.xyz, YourBusiness.xyz, or YourIdea.xyz, can be immediately registered through any accredited registrar or reseller that carries .xyz domain names. This process is initiated when the customer searches for a .xyz domain name. If the .xyz domain queried is available, the registrar will confirm the retail price for the customer to register the domain for a term between 1-10 years. If the domain queried is unavailable, the customer should continue searching until an available domain is identified. Like any other online purchase, customers must then enter their contact and billing information to create an account and complete the order. As required by ICANN, the contact information of the registrant of any domain with any ending can be publicly searched through the WHOIS, a function similar to a phone directory. Since .xyz domains support WHOIS privacy protection [9], registrants may opt to keep their contact information hidden from the public through their registrar. WHOIS privacy protection is a registrar service, and the price is set by the registrar, not XYZ. In many cases, registrars offer WHOIS privacy protection for free.

Upon completion of the order, the .xyz domain is instantly allocated to the registrant. The registrant can then modify the settings of the domain, such as the A record to point to a specific IP address, the MX records to set up custom email addresses, or NS records to point to specific name servers. As the owner of the domain name, the registrant can freely use and manage the domain's settings at any time during the registration term. Likewise, 1.111B Class domains may be used by registrants for any purpose, regardless of if they are described in the Uses section above or not. As a safeguard to avoid abusive or illegal activities, the registrar and registry can temporarily suspend domains that violate their anti-abuse policies.

Prior to the expiry date, which is 1-10 years from the creation date, depending on the original term selected, the registrant is given the opportunity to renew the domain between 1-10 years through the registrar. Upon renewal, the registrant may continue to manage the domain for the extension term selected. The recommended retail price of .xyz domains in the 1.111B Class is \$0.99 per domain per year, but may vary based on individual registrar pricing decisions.

4. Transfers

Like nearly all other domains, the 1.111B Class of .xyz domains can be transferred at-will by the registrant from one registrar or reseller account to another, under normal circumstances. A domain may be transferred to another

account for a number of reasons, such as transfer or ownership through a sale or portfolio consolidation into a different account. Whenever a domain is transferred to a new registrar, the registrant is charged a transfer fee by the new registrar. The transfer fee is typically equal to a one year renewal, (recommended retail price of \$0.99 per domain in the 1.111B Class), since transfers automatically add one additional year to the total registration term of the domain. For example, if a domain is scheduled to expire 3.5 years from the date of transfer, the new expiry date for the domain will be 4.5 years in the future (3.5 existing term + 1 year add-on). There are rare exceptions to this rule, such as if a domain already has a renewal date 10 years in the future, or if the domain is transferred out after the domain has expired. In both cases, the domain can still be transferred out, but one year is not added to the expiry date.

The transfer process of a domain can usually be completed without any assistance by the registrar. To transfer a .xyz domain, a registrant must: 1) login to the account center at the losing registrar, 2) unlock the domain that will be transferred, 3) request the authorization code (also known as EPP code, transfer code, or authorization code), then authorize the transfer at the winning registrar by 4) logging into the registrants account center at the winning registrar, and 5) entering the domain name and authorization code in the transfer form. The exact process may vary slightly at different registrars, so registrants are encouraged to contact their registrar for support if needed.

There is no limit to the number of times a domain can change hands, and the same wholesale fee is charged by XYZ to every registrar, regardless of the number of times a domain has been transferred. For security purposes, ICANN mandates that a domain cannot be transferred out of a registrar within 60 days of the original registration date, or within 60 days of a previous transfer [10]. However, domains may be transferred within the same registrar at any time. Registrants are encouraged to contact their registrar for more information, since policies are set by each registrar individually.

5. Abuse mitigation

XYZ enforces a strict zero-tolerance policy against .xyz domains that are used for purposes in violation of its Anti-Abuse Policies, which include spamming, phishing, malware, and other illegal activities [11] [12]. Abusive .xyz domains in the 1.111B Class that are in violation of these policies will be suspended until expiration. XYZ will proactively monitor the 1.111B Class of domains by using its proprietary abuse mitigation system to automatically suspend domains that are flagged by any of the 100+ data points used to identify abuse through a network of respected cybersecurity experts. Additionally, XYZ will investigate all complaints and suspend domains concluded to be abusive within one business day of receipt.

In some instances, XYZ may unsuspend domains that were falsely reported or cleaned up by the registrant. For domains to be considered for unsuspension, submit requests to www.gen.xyz/unsuspend. Please report abusive .xyz domains to www.gen.xyz/abuse for investigation.

6. Conclusion

The introduction of the 1.111B Class of .xyz domains is a paradigm shift in how domains can be used to communicate, conduct business, and innovate. The utility and familiarity of domain names make the 1.111B Class a preferred platform for development and investment, while their customization and inexpensiveness make them appealing for scalable

innovation. As the foundation that connects people, businesses, and devices to the internet and each other, domains are multi-faceted tools that have the ability to replace existing solutions that have created fragmentation on the internet. To stimulate innovation and creativity, all 6-digit, 7-digit, 8-digit, and 9-digit .xyz domains in the 1.111B Class have a recommended retail price of \$0.99 per year, and can be registered on an as-needed basis through a mature network of registrars and resellers. These domains will be monitored under strict anti-abuse guidelines to keep all .xyz domains safe and reputable.

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