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RFC 10023
The "_for-sale" Underscored and Globally Scoped DNS Node Name

Abstract

This document defines an operational convention that uses the reserved underscored DNS leaf node name "_for-sale" to indicate the parent domain name is available for purchase.

The convention can be deployed without disrupting existing operations, and it may be applied even when the domain name is still actively in use.

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1. Introduction

Well-established services [RFC3912] [RFC9083] exist for determining whether a DNS domain name is registered. However, the existence of a domain name does not necessarily imply that it cannot be obtained; it may still be available for sale.

Some registrars and other parties offer brokerage services between domain name holders and interested buyers. Such services are of limited value when the domain name is not available for purchase, but they may be beneficial for domain names that are explicitly marked as for sale.

This document defines a simple method to explicitly signal that a domain name, although registered, is available for purchase. It enables a domain name holder to add a reserved underscored leaf node name [RFC8552] in the zone, indicating that the domain name is for sale. The indicator can be turned on and off at will, and moreover, it is immediately deployable and does not require significant changes in existing services, allowing for a smooth introduction of the concept.

The TXT RR type [RFC1035] created for this purpose must follow the formal definition of Section 2. Its content may contain a pointer, such as a Uniform Resource Identifier (URI) [RFC3986], an Internationalized Resource Identifier (IRI) [RFC3987], or another string, allowing interested parties to obtain information or contact the domain name holder for further negotiations. Details about whether and how such negotiations occur are out of scope.

With due caution, such information can also be incorporated into automated availability services. When checking a domain name for purchasability, the service may indicate whether it is for sale and provide a pointer to the seller's information.

The TXT content defined by this document is intended primarily for human-readable informational display, rather than for algorithmic string comparison or automated processing.

The operational convention described in this document does not require any protocol change.

Examples are provided in Appendix A.

1.1. Terminology

The key words "**MUST**", "**MUST NOT**", "**REQUIRED**", "**SHALL**", "**SHALL NOT**", "**SHOULD**", "**SHOULD NOT**", "**RECOMMENDED**", "**NOT RECOMMENDED**", "**MAY**", and "**OPTIONAL**" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

Although this document defines an operational convention rather than a protocol extension, normative language is used to promote consistent and unambiguous behaviours among entities that adopt the convention.

The term "processor" refers to an entity (person, system, or service) that reads, interprets, and takes appropriate actions based on "_for-sale" DNS labels, whether manually or automatically.

The term "for sale" is used in a broad sense and may also refer to cases where the domain name is available for lease or where the contractual right to use the domain name is offered to another party.

DNS terminology in this document follows [RFC9499].

2. Conventions

2.1. General Record Format

Each "_for-sale" TXT record **MUST** begin with a version tag, optionally followed by a string containing content that follows a simple "tag=value" syntax.

The formal definition of the record format, using ABNF [RFC5234] [RFC7405], is as follows:

```
forsale-record  = forsale-version [forsale-content]
                  ; referred to as 'content' or RDATA
                  ; in a single character-string

forsale-version = %s"v=FORSALE1;"
                  ; %x76.3D.46.4F.52.53.41.4C.45.31.3B
                  ; version tag, case-sensitive, no spaces

forsale-content = fcod-pair / ftxt-pair / furi-pair / fval-pair
                  ; referred to as 'tag-value pairs'
                  ; only one tag-value pair per record

fcod-pair       = fcod-tag fcod-value
ftxt-pair       = ftxt-tag ftxt-value
furi-pair       = furi-tag furi-value
fval-pair       = fval-tag fval-value
                  ; the tags are referred to as 'content tags'
                  ; the values are referred to as 'content values'

fcod-tag        = %s"fcod="
ftxt-tag        = %s"ftxt="
furi-tag        = %s"furi="
fval-tag        = %s"fval="
                  ; all content tags case-sensitive lowercase

fcod-value      = 1*239OCTET

ftxt-value      = 1*239OCTET

furi-value      = URI / IRI
                  ; 'http', 'https', 'mailto', and 'tel' URI schemes
                  ; exactly one URI or IRI

URI             = <as defined in RFC3986, Appendix A>
IRI             = <as defined in RFC3987, Section 2.2>

fval-value      = fval-currency fval-amount
                  ; total length: 2 to 239 characters
fval-currency   = 1*%x41-5A
                  ; one or more uppercase letters (A-Z)
                  ; indicating (crypto)currency
                  ; e.g., USD, EUR, BTC, ETH
                  ; standard three-letter fiat currencies recommended
fval-amount     = int-part [ %x2E frac-part ]
                  ; integer part with optional fractional part
                  ; e.g., 0.00010
int-part        = 1*DIGIT
frac-part       = 1*DIGIT
```

See Section 2.2 for more detailed format definitions per content tag type.

Each "_for-sale" TXT record **MUST NOT** contain more than one tag-value pair, but multiple TXT records **MAY** be present in a single RRset.

Every tag-value pair in the RRset **MUST** be unique, but multiple instances of the same content tag **MAY** occur within a single RRset (e.g., two "fcod=" content tags, each with a different content value).

See Section 2.4 for additional RRset limitations.

The **OPTIONAL** forsale-content provides information to interested parties as explained in Section 1.

If the forsale-content is absent or invalid, but a valid version tag is present, processors **SHOULD** assume that the domain is for sale unless a local policy indicates otherwise. For example:

```
_for-sale.example.com. IN TXT "v=FORSALE1;"
_for-sale.example.com. IN TXT "v=FORSALE1;fcod="
_for-sale.example.com. IN TXT "v=FORSALE1;foo=bar"
```

In such cases, processors determine how to proceed. An approach might be to signal that the domain is for sale and to rely on conventional mechanisms (e.g., WHOIS or Registration Data Access Protocol (RDAP)) to retrieve and present contact information.

TXT records in the same RRset that lack a version tag **MUST NOT** be interpreted as a valid "_for-sale" indicator. However, they may still offer some additional information for humans when considered alongside a valid record. For example:

```
_for-sale.example.com. IN TXT "I am for sale"
_for-sale.example.com. IN TXT "v=FORSALE1;fcod=XX-NGYyYjEyZWY"
```

If no TXT records at a "_for-sale" leaf node name contain a valid version tag, processors **MUST** consider the node name invalid and **MUST** ignore it.

See Section 2.3 for additional content limitations.

2.2. Content Tag Type Definitions

The following content tags are defined as valid content tags.

Content tags are optional. Providing at least one to give interested parties a pointer for engagement is **RECOMMENDED**.

2.2.1. fcod

This content tag is intended to contain a code that is meaningful only to processors that understand its semantics. The content value **MUST** consist of at least one octet.

The manner in which the "fcod=" content tag is used is determined by agreement between cooperating parties.

For example, a domain name registry may allow registrars to enter a "for sale" URL into their back-end system. From that URL, a unique code is generated. This code is inserted as the value of the "fcod=" content tag of the "_for-sale" TXT record of a domain name, as shown in the example below.

When a user checks the availability of the domain name using a registry-provided tool (e.g., a web interface), the domain name registry may use the code to redirect the user to the appropriate "for sale" URL, which may include a query component containing the domain name, for example:

```
https://forsale-url.example.com/exco?d=example.org
```

The rationale for this approach is that controlling parties retain authority over redirection URLs and any other information derived from the content tag, thereby preventing users from being sent to unintended or malicious destinations or from being presented with unintended content. This approach also allows the interpretation of "fcod=" content values to be adjusted centrally in back-end systems, such as determining which "for sale" URL to redirect to, without modifying the "_for-sale" TXT records.

The following example shows a string encoded using Base64 [RFC4648] preceded by the prefix "EXCO-" as the value of the content tag:

```
_for-sale IN TXT "v=FORSALE1;fcod=EXCO-S2lscm95IHdhcyBoZXJl"
```

See Appendix A for other possible uses of this content tag.

Note: As an implementation consideration, when multiple parties are involved in the domain sale process and use the same mechanism, it may be difficult to identify the relevant content in an RRset. Adding a recognisable prefix to the content (e.g., "EXCO-") is one possible approach. However, this is left to the implementor, as it is not enforced in this document. In this case, Example Corporation (ExCo) would recognise its content tag and interpret it as intended. This example uses Base64 encoding to avoid escaping and ensure printable characters, though this is **OPTIONAL** and not required.

2.2.2. ftxt

This content tag is intended to contain concise, human-readable text that conveys additional information to interested parties. For example:

```
_for-sale IN TXT "v=FORSALE1;ftxt=Call for info."
```

While a single octet is the minimum, it is **RECOMMENDED** to provide more context.

While a URI in this field is not syntactically prohibited, its interpretation as a URI is not guaranteed. Use of URIs in this field **SHOULD** be avoided in favour of the "furi=" content tag.

See Section 2.2.4 for a way to explicitly indicate an asking price for easier machine parsing.

See Section 3.2 for considerations regarding the representation of non-ASCII data in the content value.

2.2.3. furi

This content tag is intended to contain a human-readable and machine-parsable URI that can be used by interested parties to retrieve further information.

While the syntax allows any URI scheme, only the following schemes are **RECOMMENDED** for use:

- '`http`' and '`https`' (see [RFC9110]),
- '`mailto`' (see [RFC6068] and Section 11.1 of [RFC6530]), and
- '`tel`' (see [RFC3966]).

The content value **MUST** contain exactly one URI. For example:

```
_for-sale IN TXT "v=FORSALE1;furi=https://example.com/foo%20bar"
```

URIs **MUST** conform to the syntax and encoding requirements specified in Section 2.1 of [RFC3986], including the percent-encoding of characters not allowed unencoded (e.g., spaces must be encoded as `%20` in a URI).

Section 3.2 provides additional guidelines on character encoding.

See the Security Considerations section for possible risks.

Note: References to a URI in this document also encompass IRIs [RFC3987].

2.2.4. fval

This content tag is intended to contain human-readable and machine-parsable text that explicitly indicates an asking price in a certain currency.

Price information is commonly published by domain sellers. The "fval=" content tag provides a structured format for this purpose, enabling reliable machine parsing and reducing ambiguity compared to embedding prices in free-form "ftxt=" content tags. For example:

```
_for-sale IN TXT "v=FORSALE1;fval=EUR999"
```

The information provided in "fval=" is not binding and is intended for indicative purposes only. Current and reliable information can be obtained by engaging directly via "furi=" or other available communication mechanisms.

See Section 3.3 for additional operational guidelines and the Security Considerations section for possible risks.

2.2.5. Future Tags

Future tags may be defined to accommodate operational needs. Future content tags **MUST NOT** alter the semantics of existing content tags.

A tag name length of 4 characters is **RECOMMENDED** for consistency with the initial tag set and to maintain compact record formats.

2.3. Content Limitations

The "_for-sale" TXT record [RFC8553] (Section 2.1) **MUST** contain content deemed valid under the operational convention defined in this document.

The "_for-sale" indicator is only to be used for domain names that are available for purchase. Any text suggesting that a domain is not for sale is invalid content. When a domain name is no longer for sale, the "_for-sale" indicator is to be removed.

The existence of a "_for-sale" leaf node name does not obligate the holder to sell the domain name; it may have been published in error or withdrawn later for other reasons.

This document does not dictate the exact use of any content values in the "_for-sale" TXT record. Parties may use it in their tools, perhaps even by defining specific requirements that the content value must meet. Content values can also be represented in a human-readable format for individuals to interpret. See Appendix A for clarification.

See Section 3 for additional guidelines.

2.4. RRset Limitations

This document does not impose a limit on the number of TXT records in the RRset of "_for-sale" TXT records.

When multiple "_for-sale" TXT records are present in an RRset, the processor **MAY** select one or more of them.

For example, a domain name registry might extract content from an RRset that includes a recognisable "fcod=" content tag and use it to direct visitors to a sales page as part of its services. An individual, on the other hand, might extract a phone number (if present) from a "furi=" tag in the same RRset and use it to contact a potential seller.

An example of such a combined record is provided in Appendix A.5.

The RDATA [RFC9499] of each "_for-sale" TXT record **MUST** consist of a single character-string [RFC1035] with a maximum length of 255 octets, to avoid the need to concatenate multiple character-strings during processing.

The following example illustrates an invalid "_for-sale" TXT record due to the presence of multiple character-strings:

```
_for-sale IN TXT "v=FORSALE1;" "ftxt=foo" "bar" "invalid"
```

2.5. Wildcard Limitation

Wildcards are only interpreted as leaf names, so "_for-sale.*.example." is not a valid wildcard [RFC4592] and is non-conformant. Hence, it is not possible to put all domains under a Top-Level Domain (TLD) for sale with just one "_for-sale" TXT record.

The example below, however, shows a common use case where a "_for-sale" leaf node name exists alongside a wildcard:

```
*         IN A    198.51.100.80
          IN AAAA 2001:db8::80
_for-sale IN TXT  "v=FORSALE1;ftxt=Only $99 at ExCo"
```

2.6. Placement of the Leaf Node Name

The "_for-sale" leaf node name can be placed at any level of the DNS, except in the .arpa infrastructure TLD.

Table 1 illustrates this:

Name	Situation	Verdict
_for-sale.example.	Root zone	For sale
_for-sale.aaa.example.	Second level	For sale
_for-sale.exco.bbb.example.	Third level with public registry	For sale
_for-sale.www.ccc.example.	Third level without public registry	See "Note 1" below
_for-sale.51.198.in-addr.arpa.	Infrastructure TLD	See "Note 2" below
xyz._for-sale.example.	Invalid placement, not a leaf	Non-conformant

Table 1: Placements of TXT Record

Note 1: When the "_for-sale" leaf node name is applied to a label under a subdomain, there may not be a public domain name registry [RFC9499] capable of properly recording the rights associated with that label. Nevertheless, this does not constitute a violation of this document. One possible approach is for the involved parties to establish a mutual agreement to formalise these rights.

Note 2: If a "_for-sale" leaf node name were to appear under the .arpa infrastructure TLD, it might be interpreted as an offer to sell IP address space, E.164 numbers, or the like. However, such use is explicitly out of scope for this document, and processors **MUST** ignore any such records.

The operational convention in this document is designed for the global DNS. An application to Special-Use Domain Names [RFC6761] (e.g., .onion, .alt) is out of scope.

3. Operational Considerations

3.1. DNS Wildcards

DNS wildcards interact poorly with underscored names [RFC8552] (Section 1.4), but they may still be encountered in practice, especially with operators who are not implementing this mechanism. This is why the version tag is a mandatory element: It allows processors to distinguish valid "_for-sale" records from unrelated TXT records.

Nonetheless, any assumptions about the content of "_for-sale" TXT records should be made with caution, particularly in edge cases where wildcard expansion -- possibly combined with DNS aliases (e.g., CNAMEs) or redirections (e.g., DNAMEs [RFC6672]) -- might result in misleading listings or unintended references to third-party domains.

3.2. Handling of RDATA

Since this method relies on DNS TXT records, standard content rules apply as defined in [RFC1035] (Section 3.3.14). This includes the possibility of including non-ASCII data in the content value.

When non-ASCII data is used, interpretation may become ambiguous. For this reason, it is **RECOMMENDED** that text in content values be encoded in UTF-8 [RFC3629], conform to the Network Unicode format [RFC5198], and use a subset of Unicode code points consistent with [RFC9839] (Section 4.3), with the exception of `%x09`, `%x0A`, and `%x0D`, which are best avoided.

Processors are **RECOMMENDED** to handle such encodings to ensure that non-ASCII content values are correctly interpreted and represented.

Internationalized Domain Names (IDN) (e.g., in the "furi=" content tag) **MAY** appear as A-labels as well as U-labels [RFC5890], with U-labels encoded as described above.

Implementation note: Some DNS query tools return DNS records in presentation format, rather than the underlying RDATA content. Parsers of the ABNF in this document **MUST** ensure they operate on the raw TXT RDATA content, not its escaped presentation format [RFC1035] (Section 5.1). If the TXT RDATA consists of multiple character-strings, they **SHOULD** be concatenated into a single contiguous string prior to being interpreted as a UTF-8 encoded value matching the ABNF.

See Section 3.6 for additional guidelines and the Security Considerations section for possible risks.

3.3. Currency

The ABNF in Section 2.1 allows currency codes consisting of one or more uppercase letters, providing flexibility to accommodate both standard fiat currencies and other widely recognised abbreviations, such as cryptocurrencies.

The use of standard fiat currencies is **RECOMMENDED**. When used, they **MUST** be represented by three-letter uppercase currency codes as specified in [ISO4217] (e.g., USD, EUR, GBP, and JPY).

The amount component consists of an integer part, optionally followed by a fractional part separated by a decimal point (`%x2E`, ".").

3.4. TTLs

Long TTLs [RFC1035] (Section 3.2.1) increase the risk of outdated data misleading buyers into thinking the domain is still available or that advertised prices remain current.

A TTL of 3600 seconds (1 hour) or less is **RECOMMENDED**, and the TTL values of all records in an RRset have to be the same [RFC2181] (Section 5.2).

3.5. Ambiguous Constructs

Ambiguous constructs in content values **SHOULD** be avoided, as illustrated by the following example:

```
_for-sale IN TXT "v=FORSALE1;fcod=TRIP-confusing;ftxt=dont_do_this"
```

The above example is a valid "fcod=" content tag that includes the string ";ftxt=" in the content value, which may be confusing, as it does not actually represent an "ftxt=" content tag.

3.6. Robustness

Because the format of the content part is not strictly defined in this document, processors **MAY** apply the robustness principle of being liberal in what they accept. This also applies to space characters (`%x20`) immediately following the version tag.

Alternatively, parties may agree on a more strictly defined proprietary format for the content value to reduce ambiguity. However, it is out of scope to discuss which mechanisms are put in place for such agreements.

When encountering unexpected or prohibited control characters in "ftxt=" content (e.g., `%x09`, `%x0A`, `%x0B`, `%x0D`; see Section 3.2), processors **MAY** sanitise them by replacing them with spaces (`%x20`) to ensure correct representation or replacing them with the Unicode REPLACEMENT CHARACTER U+FFFD (`%xEF.BF.BD`) to signal the presence of problematic content.

3.7. Scope of Application

The "_for-sale" mechanism relies upon the domain name being resolvable in the DNS. This is not guaranteed, for example, during a redemption period, in pendingDelete status [STD69], or when the domain is DNSSEC signed but fails validation (i.e., has a bogus state).

4. Security Considerations

One use of the TXT record type defined in this document is to parse the content it contains and to publish certain information from it on a website or elsewhere. However, there is a risk if the domain name holder publishes a malicious URI or one that points to improper content. This may result in reputational damage to the party parsing the record.

An even more serious scenario arises when the content of the TXT record is not properly validated and sanitised, potentially enabling attacks such as cross-site scripting (XSS) or SQL injection, as well as spoofing techniques based on Unicode manipulation, including bidirectional text attacks and homograph attacks.

Therefore, parsing and publishing this information requires careful validation to ensure that only valid characters and formats are processed. Possible mitigation strategies include output sanitisation, maintaining a curated and validated list of URIs, or applying other validation methods, such as URI reputation checks before display.

Automatically following URIs from "_for-sale" records without user consent creates security risks, including exposure to malware, phishing pages, and scripted attacks. Processors **MUST NOT** automatically redirect users when encountering "furi=" content tags without requiring explicit confirmation before navigation. This allows users to inspect the destination before proceeding.

Some URI schemes recommended in Section 2.2.3 do not mandate transport security (e.g., '`http`', '`mailto`'); therefore, more secure schemes such as '`https`' are preferred.

There is also a risk that this method will be abused as a marketing tool or to lure individuals into visiting certain sites or making contact by other means, without there being any intention to actually sell the domain name.

Domain name holders may advertise artificially low prices, and processors that present "fval=" data to users **SHOULD** display appropriate disclaimers (e.g., "Price indicative only - verify with seller"). Automated systems **SHOULD NOT** make purchase commitments based solely on advertised prices without human verification.

5. Privacy Considerations

The use of the "_for-sale" leaf node name publicly indicates the intent to sell a domain name. Domain name holders should be aware that this information is accessible to anyone querying the DNS and may have privacy implications.

There is a risk of data scraping, such as the scraping of email addresses and phone numbers.

Publishing contact information may expose domain name holders to spam or unwanted contact.

6. IANA Considerations

IANA has added the following entry to the "Underscored and Globally Scoped DNS Node Names" registry [RFC8552]:

RR Type	_NODE NAME	Reference
TXT	_for-sale	RFC 10023

Table 2: Entry for the Underscored and Globally Scoped DNS Node Names Registry

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Appendix A. Additional Examples

A.1. Example 1: Code Format

The following example illustrates a proprietary format defined and used by agreement between parties (for example, a domain name registry and its registrars), without a clearly specified meaning for third parties. For example, it may be used to automatically redirect visitors to a web page, as described in Section 2.2.1:

```
_for-sale IN TXT "v=FORSALE1;fcod=XX-aHR0cHM...wbGUuY29t"
```

Note: The content value in the above example is truncated for readability.

The use of the "fcod=" content tag is, in principle, unrestricted, allowing implementors to define additional uses as needed. For example, it may convey arbitrary formatting or conditional display instructions, such as adding an extra banner (e.g., "eligibility criteria apply") or specifying a style, including color, font, emojis, or logos.

A.2. Example 2: Free Text Format

The following example shows a free text format with additional unstructured information intended to be human-readable:

```
_for-sale IN TXT "v=FORSALE1;ftxt=Eligibility criteria apply."
```

The content in the following example could be malicious, but it is not in violation of the convention in this document (see the Security Considerations section):

```
_for-sale IN TXT "v=FORSALE1;ftxt=<script>...</script>"
```

A.3. Example 3: URI Format

The following example shows the TXT record that the holder of "example.com" adds to the zone to signal that the domain is for sale:

```
_for-sale IN TXT "v=FORSALE1;furi=https://example.com/fs?d=eHl6"
```

An interested party notices this signal and can visit the URI mentioned for further information. The TXT record may also be processed by automated tools, but see the Security Considerations section for possible risks.

As an alternative, a '`mailto`' URI could also be used:

```
_for-sale IN TXT "v=FORSALE1;furi=mailto:hq@example.com?subject=foo"
```

Or a telephone URI:

```
_for-sale IN TXT "v=FORSALE1;furi=tel:+1-201-555-0123"
```

There can be a use case for these URIs, especially since WHOIS (or RDAP) often has privacy restrictions, but see the Privacy Considerations section for possible downsides.

A.4. Example 4: Asking Price Format

The following examples illustrate the asking price format, which consists of an uppercase currency code (e.g., USD or EUR) followed by a numeric amount. See Section 3.3 for additional guidelines.

In Bitcoins:

```
_for-sale IN TXT "v=FORSALE1;fval=BTC0.000010"
```

In US dollars:

```
_for-sale IN TXT "v=FORSALE1;fval=USD750"
```

A.5. Example 5: Combinations

The following example shows multiple valid TXT records from which a processor can choose:

```
_for-sale IN TXT "v=FORSALE1;furi=https://fs.example.com/"
          IN TXT "v=FORSALE1;ftxt=This domain name is for sale"
          IN TXT "v=FORSALE1;fval=EUR500"
          IN TXT "v=FORSALE1;fcod=EXCO-ZGVhZGJlZWYx"
          IN TXT "v=FORSALE1;fcod=XYZ1-MTExLTIyMi0zMzMtNDQ0"
```

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