```
            Procedure for the deployment of DNS based RFC1327 mapping rules
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This short note summarizes the three phases fo deployment for the use of DNS
to distribute (at first) and to manage (at last) the RFC1327 mapping rules
into DNS. Please also refer to RFC 1664 for major technical details.

Phase 1 - centralized
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All mapping rules (X.400 to RFC822 and RFC822 to X.400) are stored centrally
under X42D.it top level domain. The PX label (the search key) is in
"centralised" form, i.e.

```
 rfc822-domain-c.X42D.it.      IN  PX  50  822-map   X400-map
 x400-domain-c.X42D.it.        IN  PX  50  822-map   X400-map
```

examples:

```
 xx.fr.X42D.it.                      IN  PX  50  xx.fr. PRMD-xx.ADMD-atlas.C-fr.
 PRMD-xx.ADMD-atlas.C-fr.X42D.it.  IN  PX  50  xx.fr. PRMD-xx.ADMD-atlas.C-fr.
```

Query routines at first look for distributed mapping (according to RFC1664),
and as this information is not yet present, then they will try centralized
mapping issuing a different keyword for the PX query.

During this phase nobody else than the mantainer of the centralised X42D.it
tree is allowed to insert PX mapping information into DNS.

During this phase DNS information is loaded starting from the International
Static Mapping RFC 1327 Tables.

Phase 2 - distributed (partially)
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Some countries take control of their national X42D.cc name space. All X.400 to
RFC822 mappings for that country are stored at the national server for X42D.cc
and the RFC822 to X.400 mappings are stored at the national server for 'cc'
top level domain.

For compatibility with some DNS implementations (old) which do not scale up
queries proplerly, at the same time the RFC822 to X.400 mapping are still
kept also in the central international server. Thus a query for a mapping
rule X.400 to RFC822 will for sure be resolved accordingly to RFC1664.
A query for a mapping rule RFC822 to X.400 in country 'cc' will possibly be
resolved accordingly to RFC1664, and if not, will be answered still by the
central international server.

examples:

```
xx.fr.                            IN  PX  50  xx.fr. PRMD-xx.ADMD-atlas.C-fr.
   (the above rule is into the 'fr' top level domain server)

 PRMD-xx.ADMD-atlas.X42D.fr.  IN  PX  50  xx.fr. PRMD-xx.ADMD-atlas.C-fr.
   (the above rule is into the 'X42D.fr' domain server)
```

meanwhile the following rule is still in place for compatibility:

```
 xx.fr.X42D.it.                   IN  PX  50  xx.fr. PRMD-xx.ADMD-atlas.C-fr.
   (the above rule is in the international central server)
```

This "intermediate" deployment solution for RFC822 to X.400 mappings, i.e.
having at the same time the RFC822 to X.400 PX record in place on the national
server for 'cc' top level domain and on the central international server
could eventaully be skipped by national coordination decision. In fact while
the X.400 to RFC822 mapping rules are actually moved under X42D.cc, the whole
RFC822 to X.400 rules could be simply left under the central X42D.it server
and wait for the one by one migration to 'phase 3' by single local domains.

Syncronisation between the national mapping tree and the centralised tree is
accomplished automatically by the query method: the first query to DNS is
always made to the nationally defined tree, and only if this fails another
query is issued to the centralised DNS mapping tree. However, it is strongly
suggested to keep strict coordination between the centralised tree mantainer
and the national mapping tree being created: the information in the centralised
tree must be identical to the one being contained into the nationally defined
one. The centralised tree for that country in fact can be removed only when
the national tree is fully implemented.

During this phase, the national mantainer of the national mapping tree
provides its own section of the mapping tables in DNS format to the
centralised tree mantainer, and the same information in static RFC 1327
table format to the International Mapping Table coordinator.

Phase 3 - total delegation of authority
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As soon as a local domain is able to support PX records, and as soon as the
local management people understanding of the mapping rules is consolidated,
and of course if the country 'cc' local X42D.cc tree is already in place, then
the local domain can take care (fully accordingly to RFC1664) of its own
mappings. The national mapping server thus just delegates using NS records
into the X42D.cc tree, and let the local server fill in PX records into the
RFC822 domain space.

Note that this delegation does not need a global coordination: in fact as
soon as a local domain is ready to go, it will automatically override
the nationally centralised and internationally centralised rules by
inserting its own information into DNS. However notification to the
central coordination is anyhow required, in order to remove redundant
information from the national and/or international central servers.

examples:

```
  xx.fr.                          IN  PX  50  xx.fr. PRMD-xx.ADMD-atlas.C-fr.
    (the above rule is into the 'xx.fr' domain server)

  PRMD-xx.ADMD-atlas.X42D.fr.  IN  PX  50  xx.fr. PRMD-xx.ADMD-atlas.C-fr.
    (the above rule is into the 'PRMD-xx.ADMD-atlas.X42D.fr' domain server)
```

The two domain servers could eventually reside on the same physical DNS
server (it is strongly adviced to have the same server hosting both the
RFC822 and X.400 equivalent branches of the name tree whenever possible).

During this final phase, the Static Mapping Tables will be derived starting
from the DNS information, using appropriate tools.

Relationship between RFC 1327 Mapping Authority and DNS mantainer
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Implementation of RFC 1664 requires coordination between people mantaining
the mapping tables and people mantaining the DNS information. This is
specially true during phase 2 and phase 3 of the deployment. As soon as the
national 'X42D.cc' tree is created, its maintenance should be delegated
directly to the National Mapping Authority, or viceversa, the National
Mapping Authority must submit to the actual mantained of this 'X42D.cc' name
space the correct information. On the other side, the information for the
RFC 822 to X.400 mapping is stored under the national top level domain
into the 'cc' nameserver in phase 2. Thus this information is provided to
the national 'cc' domain mantainer by the national mapping authority.
As soon as the information is delegated furtherly to the actual owner
of the mapping rule, then this submission is no more needed.

Current status of deployment
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As of the date of writing, the full mapping tables are available in the
centralized tree, i.e. Phase 1.

To obtain a correct functionning of the software, the environment variables
must be set as:

```
        r1327_suffix             .X42D.it
        x42d_back_compatibility  1
```