Primary Nameserver Service

- All Janet services are governed by the Janet policies [1].

What is a primary nameserver?

A nameserver is a computer that is used to convert names into numeric addresses and vice versa.

People tend to think of the Internet in terms of textual names, for example web addresses and e-mail addresses. However, the underlying network uses numeric IP addresses like: 192.168.43.75. The Domain Name System (DNS) consists of a collection of nameservers, which let a computer convert or map a name to the appropriate IP address of another computer with which it needs to communicate. The DNS nameservers hold the global set of name/number and associated mappings, and co-operate to exchange them.

The DNS is a worldwide database and there is no single authority responsible for its entirety. To allow manageability and distributed administration, domains are divided into separately managed units known as zones. A domain encompasses both the parent zone and all of its child zones. For example the ac.uk domain includes the ac.uk zone and the zones below it: site1.ac.uk, site2.ac.uk, etc. Each zone may be held on a different nameserver. The nameserver that holds the master copy of a zone where changes can be made to the records is called the primary nameserver for that zone. Copies of the zone will usually also be held on one or more other nameservers, known as secondary nameservers [2], which automatically update their information from the primary server when the zone is changed.

What does the service offer?

The Primary Nameserver Service provides high availability primary and secondary nameservers that satisfy DNS queries for the zone data they hold. They are geographically separated as a precaution against the event of fire or the failure of network connection, and all are situated on the Janet backbone.

Some organisations do not have the resources themselves to operate nameservers and maintain DNS information. Janet can provide a DNS service for its customers, publishing their zones on central nameservers and allowing a restricted facility for requesting changes to resource records or to allow the customer direct management of their resource records through a secure web portal [3]. This will reduce the effort at the organisation, but change requests submitted to Janet will be at a cost of noticeable delay in publishing changes and limited complexity of records. Janet encourages organisations to run a local DNS primary nameserver as soon as they are able, as it will enable them to make changes more quickly and to a larger number of records. Organisations with more complex requirements (e.g. multiple domains or frequent changes) will be expected to manage their own primary

nameservers, and Janet's part in supporting them will continue to be through education and advice. Note that all Janet connected organisations are eligible to use the Janet Secondary Nameserver Service [2] with or without using the Primary Nameserver Service.

Even if an organisation chooses to have its zone hosted on the Janet primary nameserver, it is important to run a local caching nameserver to support DNS resolution (the process of looking up an item in the DNS) by computers within the organisation. Without such a local server, users are likely to experience long and unpredictable delays whenever they use names for computers on the Internet or even on their local network. Setting up and running a caching nameserver is much simpler than running a full nameserver with its own zones.

Source URL: https://community.jisc.ac.uk/library/janet-services-documentation/primary-nameserver-service

Links
[1] http://community.ja.net/library/library/janet-policies
[2] http://community.ja.net/library/janet-services-documentation/secondary-nameserver-service
[3] https://community.ja.net/library/janet-services-documentation/web-administration-interface