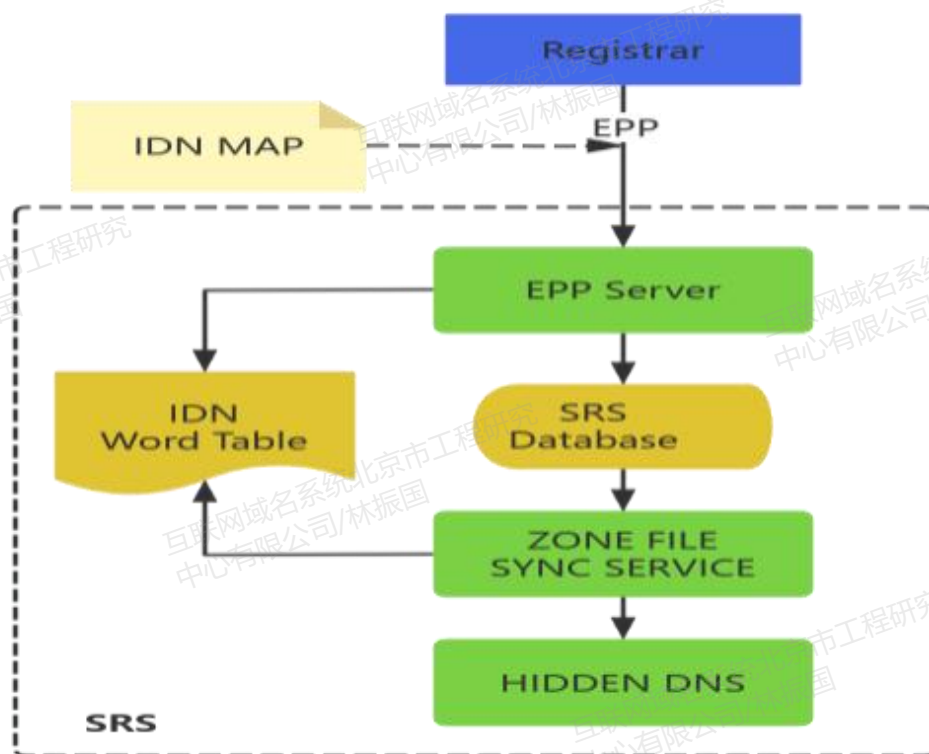




At the overall level, the system currently uses a shared registry deployment method. That is, all TLDs, including TLD variants, share the same hardware, network, and database instances. At the system software level, as shown in the architecture diagram above, the key components of IDN domain name processing include EPP domain name registration and the DNS authoritative resolution system. To ensure consistent IDN processing strategies throughout these systems, both the EPPServer and Zone File Sync Service utilize the same SDK and IDN Table. By sharing this code base, the systems maintain consistent IDN processing strategies across all components. In the future, it is possible that different TLDs will be deployed on separate hardware, networks, and database instances. However, prior to such a deployment, a technical assessment will be conducted to ensure that the TLD and its variant TLDs share the same hardware, network, and database instances. In this way, at the system level, the TLD and its corresponding variants will be restricted to the same boundary, ensuring that the same set of variants is assigned to the same registrar and the same registrant.

In the system, the IDN variant strategy mainly consists of manual variant activation and automatic variant activation. All TLDs, including TLD variants, use the same IDN Table.

When IDN configuration for TLDs is set to automatic activation of variants, variants are automatically assigned to the same registrar and the same registrant.

When the IDN configuration for a TLD is set to manual activation of variants, the EPP Server requires that the variant registration and activation be performed by the same registrar and the same registrant. If the variant is registered and activated by a registrar other than the current registrar or by a registrant other than the current registrant, the system will display the message “variant registrar not the same to the original.” If the variant is registered and activated by a registrant other than the current registrant, the system will display the message “variant registrant not the same to the original”

The latest RDP policy requires that when the TLD is selected as the minimum policy, the registrant must be empty. This breaks the requirement that variants must be assigned to the same registrant. For this reason, when the registrar initiates a domain name registration, if the system checks that the IDN policy for the TLD is the “manual activation of variants” policy, it will require the mandatory transmission of the registrant.

Under the “variant auto-activation” policy, since only the original main string is actually stored in the registration database, the presence or absence of a registrant does not affect the ownership of the domain name. Additionally, the system uniquely identifies a set of variants by storing a normalized name (representative character) for each domain name. All variants in this set can be mapped to this normalized name via an algorithm. When a registrar attempts to register a domain name, the system converts the domain name to be registered into a normalized name using the algorithm. If the converted normalized name already exists, it indicates that the variant has been registered, and the system will not allow re-registration.

For internal hosts of IDN domains, the system's current processing strategy is as follows: When the TLD is set to the “automatic activation of variants”

strategy, only the original main string can be referenced as an NS object. When the TLD is set to the “manual activation of variants” strategy, only host objects for internal hosts that have been actively created by the registrar can be referenced as NS objects.

All operations within the EPP system (creation, domain status update, domain contacts update, domain hosts update, renewal, deletion, transfer, redemption) apply to the entire set of variants: for example, deleting any variant domain will delete the entire set of variants; updating the status (such as clientUpdateProhibited) will be synchronized to all variants; changing the NS of any variant domain will apply the change to the entire set of variants.