

ORACLE

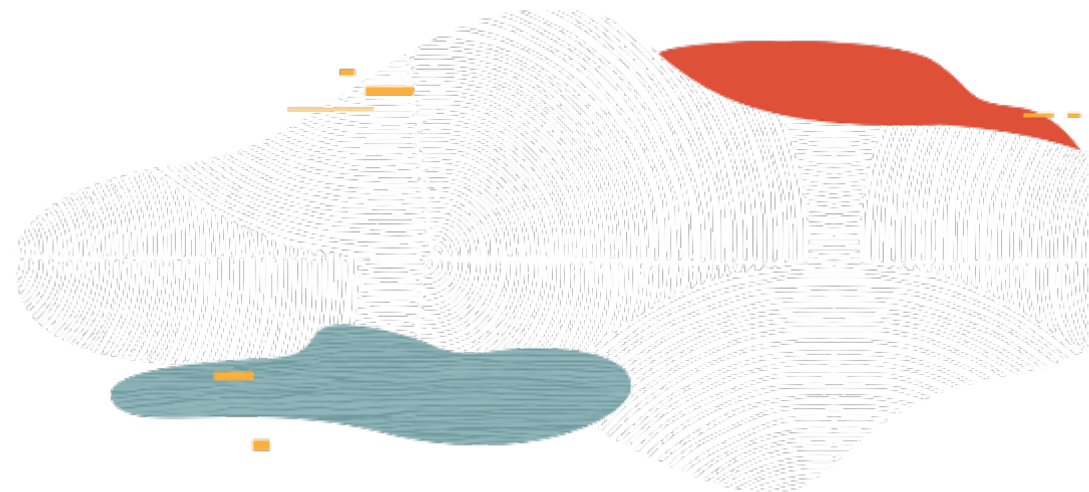
# DNS

## Level 100

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Oracle Cloud Infrastructure

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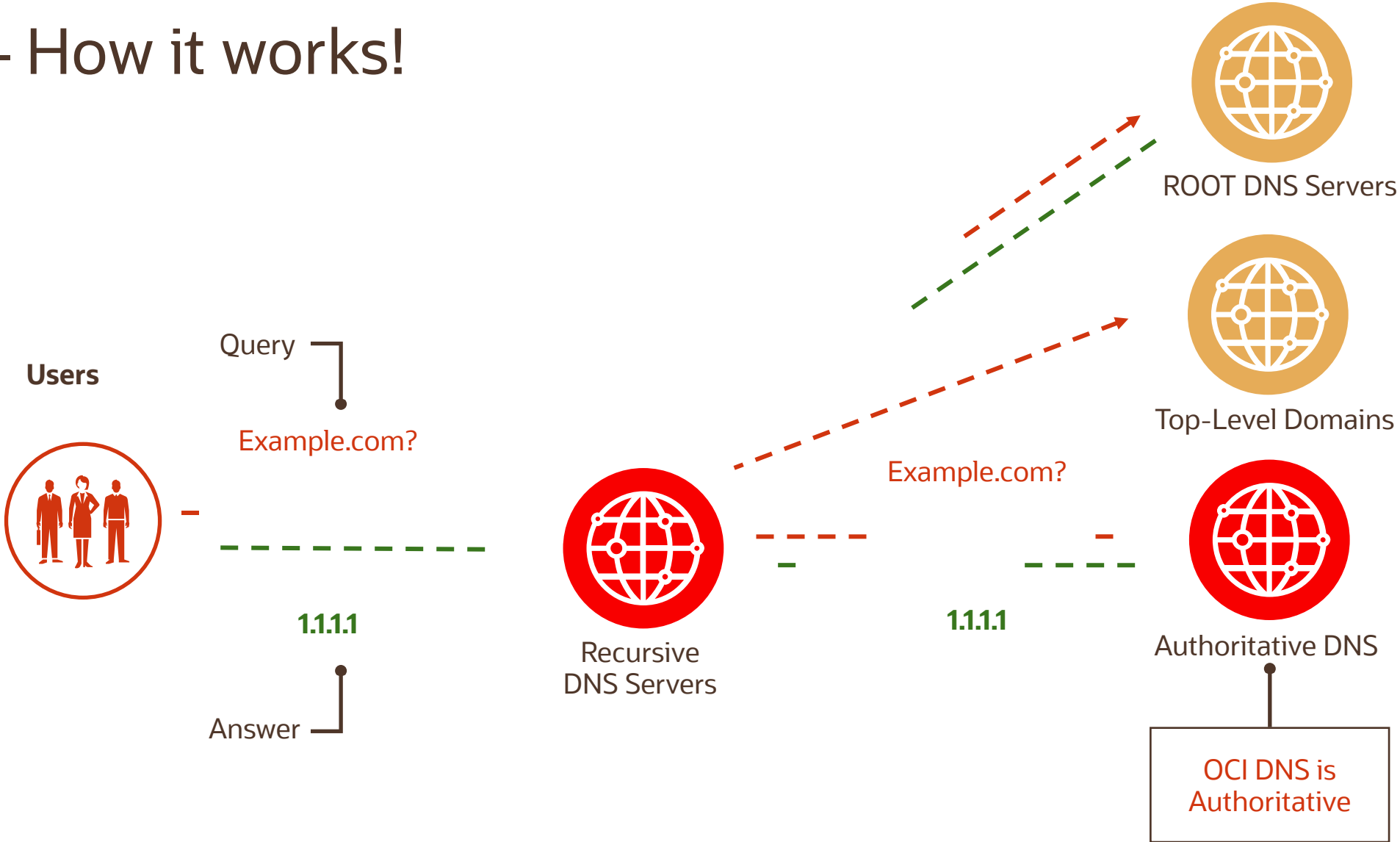


# Objectives

After completing this lesson, you should be able to:

- DNS Zone Management
  - Managing Zone and records
  - Secondary Zone Use Cases

# DNS – How it works!





# DNS Zone Management

# DNS Zone Management

- Highly scalable, global anycast Domain Name System (DNS) network that assures high site availability and low latency
- Offers a complete set of functions for zone management:
  - Create and manage zones and records
  - Import/upload zone files
  - Filter and sort views of zones and records
  - Secondary DNS support
  - APIs and SDKs



# Supported Record Types

## OCI DNS supports the following DNS records

- A (IPv4 Address Record) - [RFC 1035](#)
- AAAA (IPv6 Address Record) - [RFC 3596](#)
- CAA (Certificate Authority Authorization) - [RFC 6844](#)
- CDNSKEY (Child DNSKEY) - [RFC 7344](#)
- CDS (Child Delegation Signer) - [RFC 7344](#)
- CERT (Certificate Record) - [RFC 2538](#), [RFC 4398](#)
- CNAME (Canonical Name Record) - [RFC 1035](#)
- CSYNC (Child-toParent sync Record) - [RFC 7477](#)
- DHCID (DHCP Identification Record) - [RFC 4701](#)
- DKIM (Domain Key Identified Mail Record) - [RFC 6376](#)
- DNAME (Delegation Name Record) - [RFC 6672](#)
- DNSKEY (DNS Key Record) - [RFC 4034](#)
- DS (Delegation Signer Record) - [RFC 4034](#)
- IPSECKEY (IPSec Key Record) - [RFC 4025](#)
- KEY (Key Record) - [RFC 4025](#)
- KX (Key Exchanger Record) - [RFC 2230](#)
- LOC (Location Record) - [RFC 1876](#)
- MX (Mail Exchange Record) - [RFC 1035](#)
- NS (Name Server Record) - [RFC 1035](#)
- PTR (Pointer Record) - [RFC 1035](#)
- SOA (Start of Authority Record) - [RFC 1035](#)
- SPF (Sender Policy Framework) - [RFC 4408](#)
- SRV (Service Locator Record) - [RFC 2782](#)
- SSHFP (SSH Public Key Fingerprint) - [RFC 6594](#)
- TLSA (Transport Layer Security Auth) - [RFC 6698](#)
- TXT (Text Record) - [RFC 1035](#)
- ALIAS (CNAME at the apex)
  - A private pseudo-record that allows CNAME functionality at the apex of a zone.

# DNS Zone Management

- OCI DNS is available in the OCI Console under the “Edge Services” tab
- This will bring the user to the DNS Zone Management Screen. From here the user can create Zones to see that the service is working

The screenshot displays the OCI Console interface. At the top, a dark navigation bar shows 'Edge Services' selected, with a sub-menu containing 'DNS Zone Management', 'Traffic Management Steering Policies', 'WAF Policies', 'Internet Intelligence', and 'Health Checks'. Below this, the main content area is titled 'DNS Zone Management'. It features a 'Create Zone' button and a 'Delete' button. A table lists the existing zones, with one zone named 'oci-demozone.net' shown. The table has columns for 'Zone Name', 'OCID', 'Zone Type', and 'Created'. The 'oci-demozone.net' zone has an OCID of '...c154648e60', is of type 'Primary', and was created on 'Mon, Feb 25, 2019, 12:47:30 AM UTC'. At the bottom of the table, it indicates '0 Selected' and 'Showing 1 Item(s) < Page 1 >'.

<input type="checkbox"/>	Zone Name	OCID	Zone Type	Created
<input type="checkbox"/>	<a href="#">oci-demozone.net</a>	...c154648e60 <a href="#">Show</a> <a href="#">Copy</a>	Primary	Mon, Feb 25, 2019, 12:47:30 AM UTC

# Adding a Zone

From the Managed DNS – Zones page:

- Click “Add Zone”, Select Method type of “Manual”
- Enter a “Zone Name”, Select Zone Type of “Primary”

Zone is created and can be verified from the Managed DNS Zones Management page

The screenshot shows the Oracle Cloud console interface. On the left, there is a navigation menu with 'Edge Services' and 'DNS Zone Management' selected. The main content area shows the 'DNS Zones Management' page with a 'Create Zone' button. A modal dialog titled 'Create Zone' is open, showing the following fields:

- METHOD:** Manual
- ZONE TYPE:** Primary
- ZONE NAME:** example.com
- TAGS:** A section with a description: 'Tagging is a metadata system that allows you to organize and track resources within your tenancy. Tags are composed of keys and values which can be attached to resources.' and a link to 'Learn more about tagging'.
- TAG NAMESPACE:** No namespace (Free-Form tag)
- TAG KEY:** (empty field)
- VALUE:** (empty field)

At the bottom of the dialog, there are 'Submit' and 'Cancel' buttons, and a '+ Additional Tag' button.

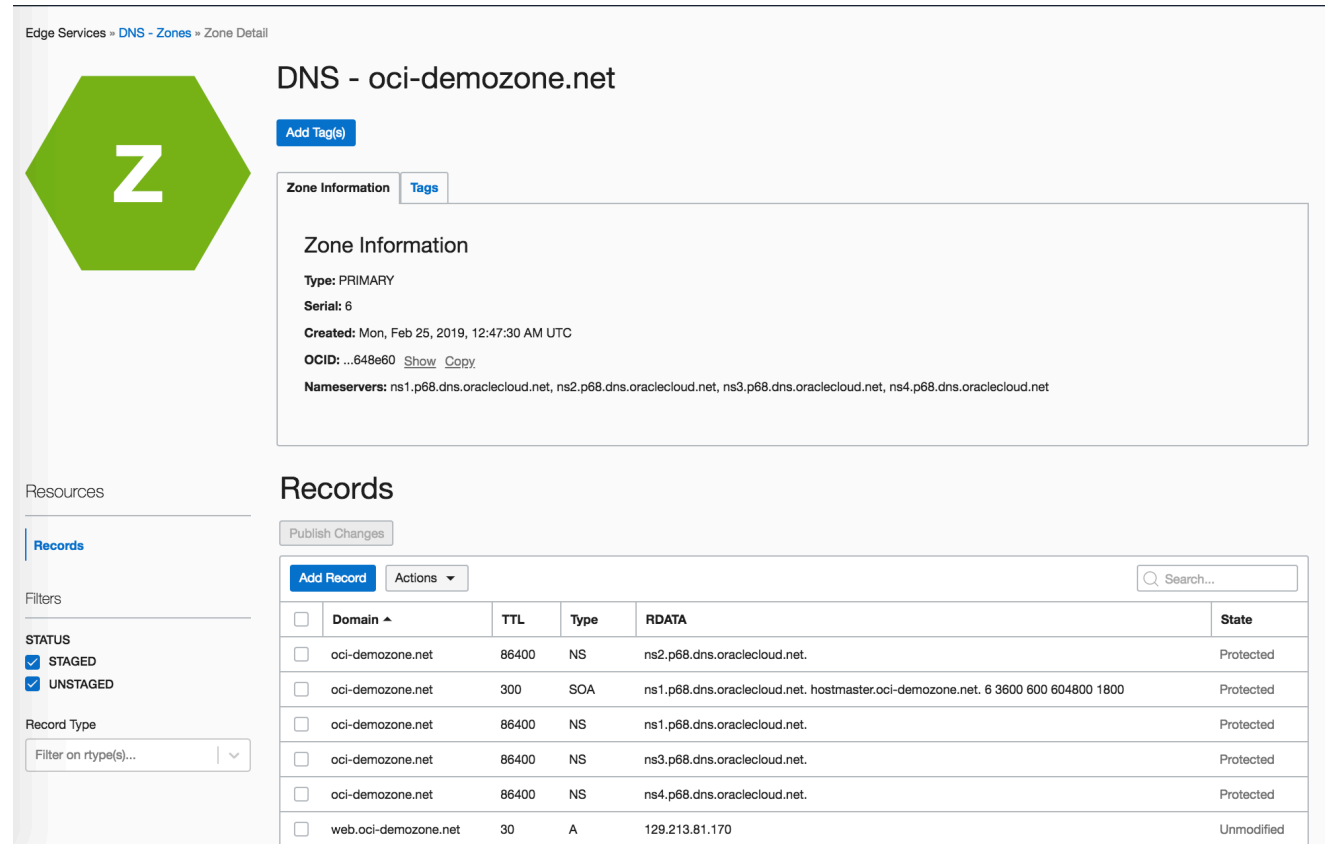




# View/Add Records

- Select a zone to view record details for that zone
- Zone details will show the list of records for that zone
- Select Add Record to add new record
- Click “Publish Changes” to update Zone with new record details.

Default NS and SOA records are automatically generated when a Zone is created, so no new records need to be added to generate query data



The screenshot displays the OCI DNS console interface for a zone named 'oci-demozone.net'. The page is titled 'DNS - oci-demozone.net' and includes a navigation breadcrumb 'Edge Services » DNS - Zones » Zone Detail'. A green hexagonal icon with a white 'Z' is prominently displayed on the left. Below the icon, the 'Resources' section is active, showing 'Records'. The 'Zone Information' tab is selected, displaying details such as 'Type: PRIMARY', 'Serial: 6', 'Created: Mon, Feb 25, 2019, 12:47:30 AM UTC', 'OCID: ...648e60', and 'Nameservers: ns1.p68.dns.oraclecloud.net, ns2.p68.dns.oraclecloud.net, ns3.p68.dns.oraclecloud.net, ns4.p68.dns.oraclecloud.net'. A 'Publish Changes' button is visible above the records table. The records table has columns for 'Domain', 'TTL', 'Type', 'RDATA', and 'State'. It lists several records, including NS and SOA records for the zone and an A record for 'web.oci-demozone.net'.

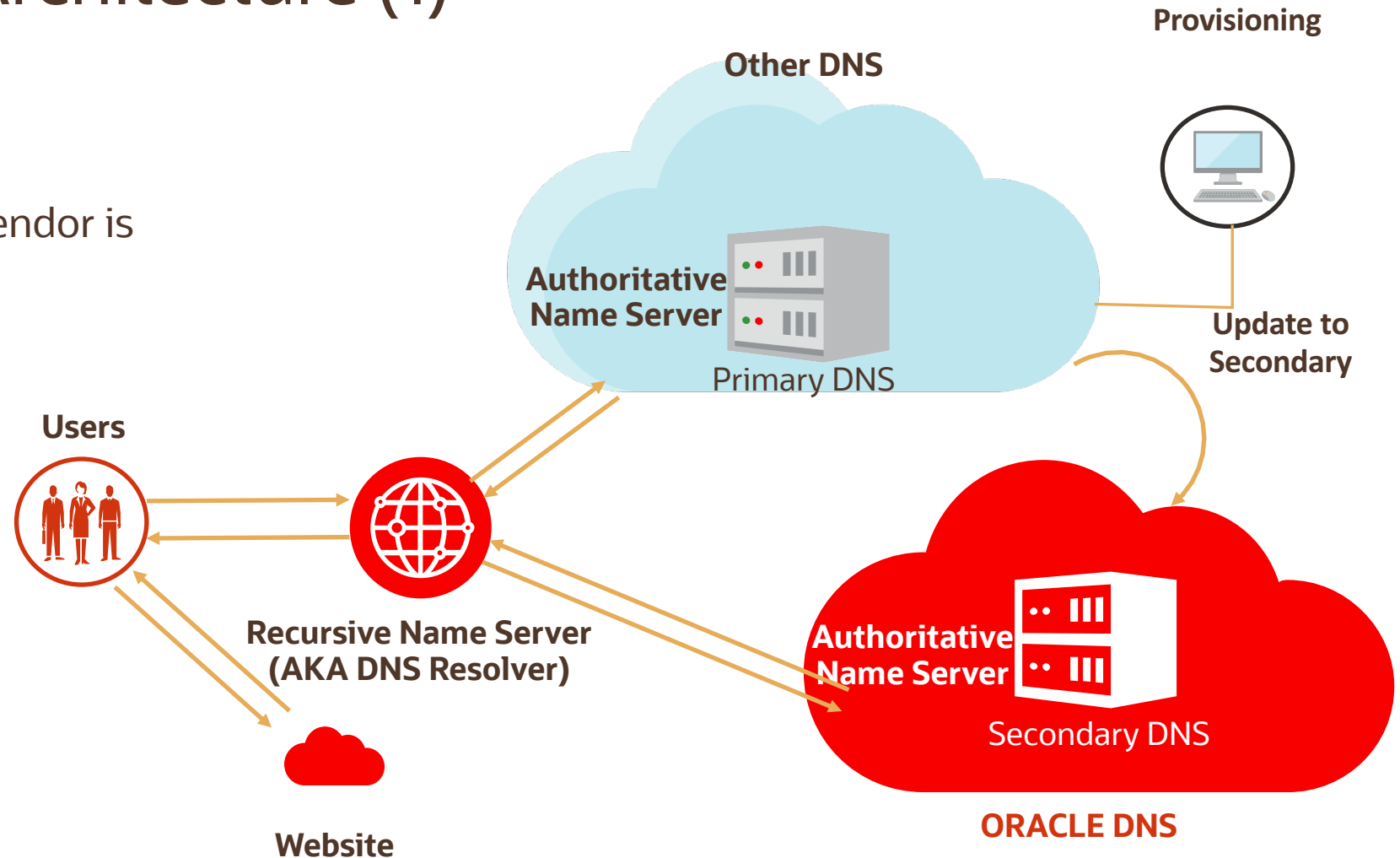
	Domain	TTL	Type	RDATA	State
<input type="checkbox"/>	oci-demozone.net	86400	NS	ns2.p68.dns.oraclecloud.net.	Protected
<input type="checkbox"/>	oci-demozone.net	300	SOA	ns1.p68.dns.oraclecloud.net. hostmaster.oci-demozone.net. 6 3600 600 604800 1800	Protected
<input type="checkbox"/>	oci-demozone.net	86400	NS	ns1.p68.dns.oraclecloud.net.	Protected
<input type="checkbox"/>	oci-demozone.net	86400	NS	ns3.p68.dns.oraclecloud.net.	Protected
<input type="checkbox"/>	oci-demozone.net	86400	NS	ns4.p68.dns.oraclecloud.net.	Protected
<input type="checkbox"/>	web.oci-demozone.net	30	A	129.213.81.170	Unmodified

# DNS Zone – Use Cases

## Secondary DNS Architecture (1)

Configuration 1:

- Oracle is Secondary, another vendor is Primary

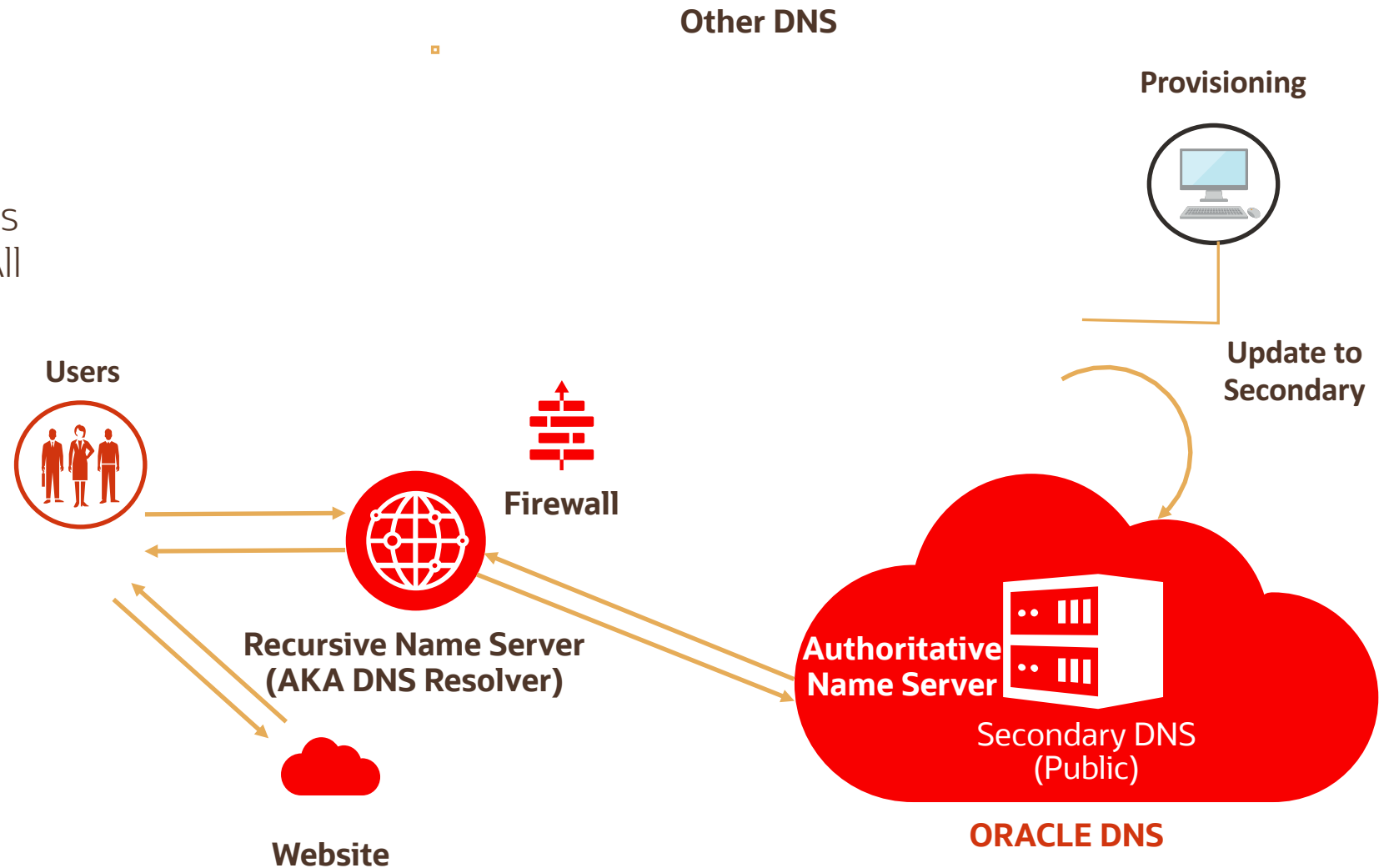


# DNS Zone – Use Cases

## Secondary DNS Architecture with 'Hidden Master'

### Configuration 2: "Hidden Master" Secondary

- Only public-facing nameserver is visible from the outside world. All DNS requests are sent to this nameserver.
- Primary DNS services secured behind firewall
- Customer maintains complete control
- Public-facing DNS network is global, primary network doesn't need to be



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