ORACLE

DNS

Level 100

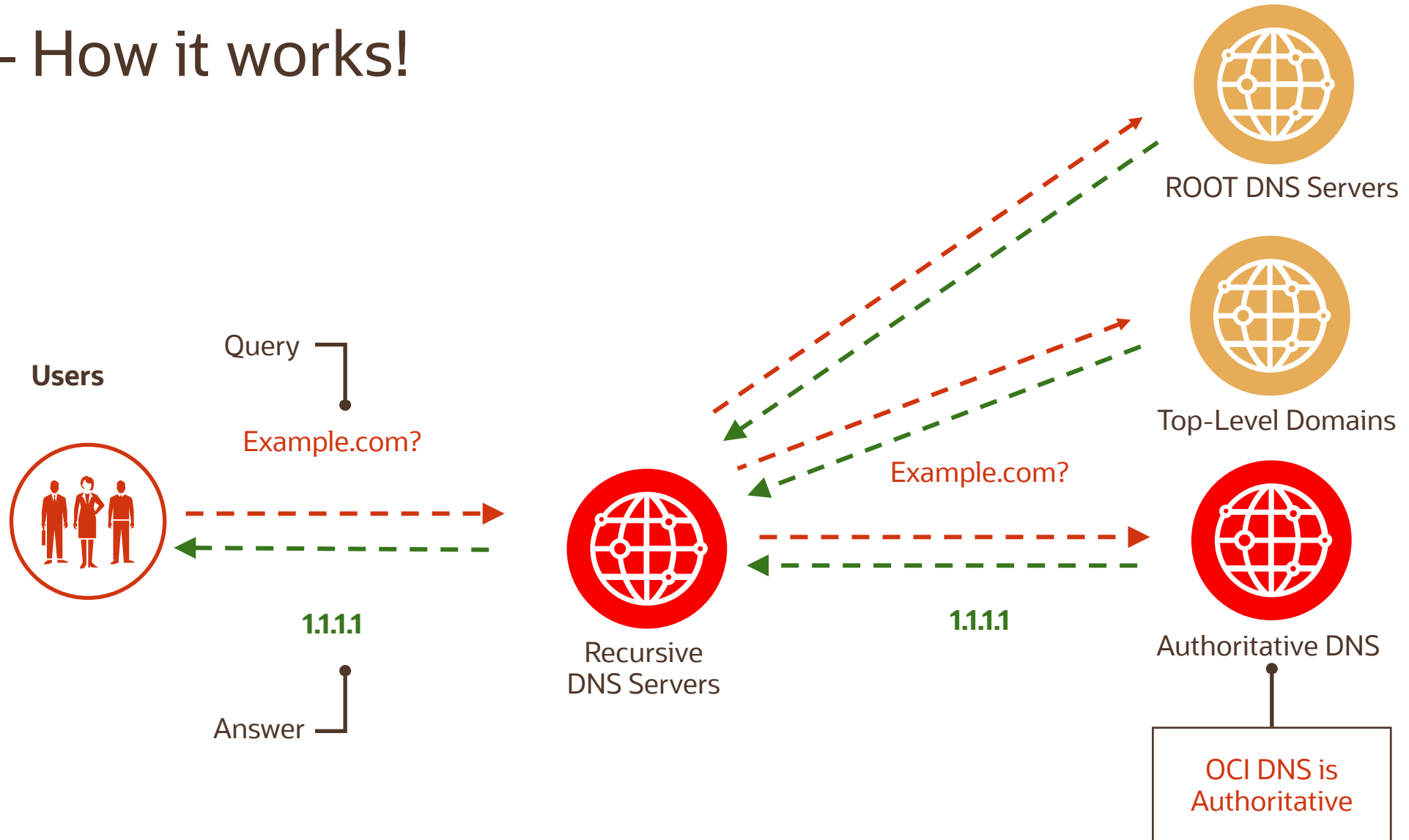Jamal Arif
Oracle Cloud Infrastructure
October, 2019

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!

Users

Query

Example.com?

1.1.1.1

Answer

Recursive
DNS Servers

ROOT DNS Servers

Top-Level Domains

Example.com?

1.1.1.1

Authoritative DNS

OCI DNS is
Authoritative

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

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

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

Edge Services » DNS - Zones » Zone Detail

DNS - oci-demozone.net

Add Tag(s)

Zone Information | Tags

Zone Information

Type: PRIMARY

Serial: 6

Created: Mon, Feb 25, 2019, 12:47:30 AM UTC

OCID: ...648e60   Show   Copy

Nameservers: ns1.p68.dns.oraclecloud.net, ns2.p68.dns.oraclecloud.net, ns3.p68.dns.oraclecloud.net, ns4.p68.dns.oraclecloud.net

Resources

Records

Filters

STATUS
☑ STAGED
☑ UNSTAGED

Record Type
Filter on rtype(s)...

Records

Publish Changes

Add Record   Actions ▼   Search...

|	Domain ▲	TTL	Type	RDATA	State
☐	oci-demozone.net	86400	NS	ns2.p68.dns.oraclecloud.net.	Protected
☐	oci-demozone.net	300	SOA	ns1.p68.dns.oraclecloud.net. hostmaster.oci-demozone.net. 6 3600 600 604800 1800	Protected
☐	oci-demozone.net	86400	NS	ns1.p68.dns.oraclecloud.net.	Protected
☐	oci-demozone.net	86400	NS	ns3.p68.dns.oraclecloud.net.	Protected
☐	oci-demozone.net	86400	NS	ns4.p68.dns.oraclecloud.net.	Protected
☐	web.oci-demozone.net	30	A	129.213.81.170	Unmodified

DNS Zone – Use Cases
Secondary DNS Architecture (1)

Configuration 1:

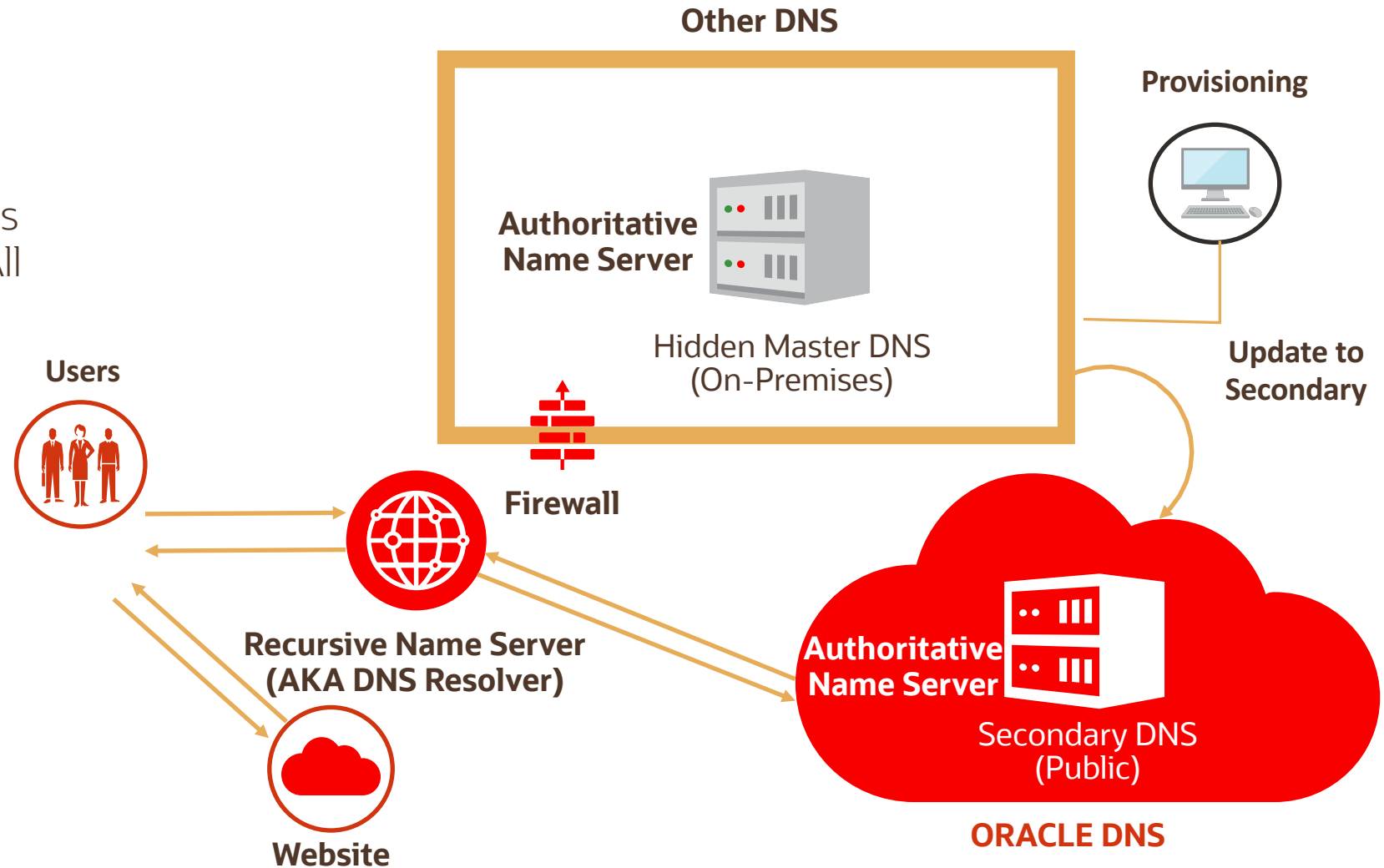- Oracle is Secondary, another vendor is Primary
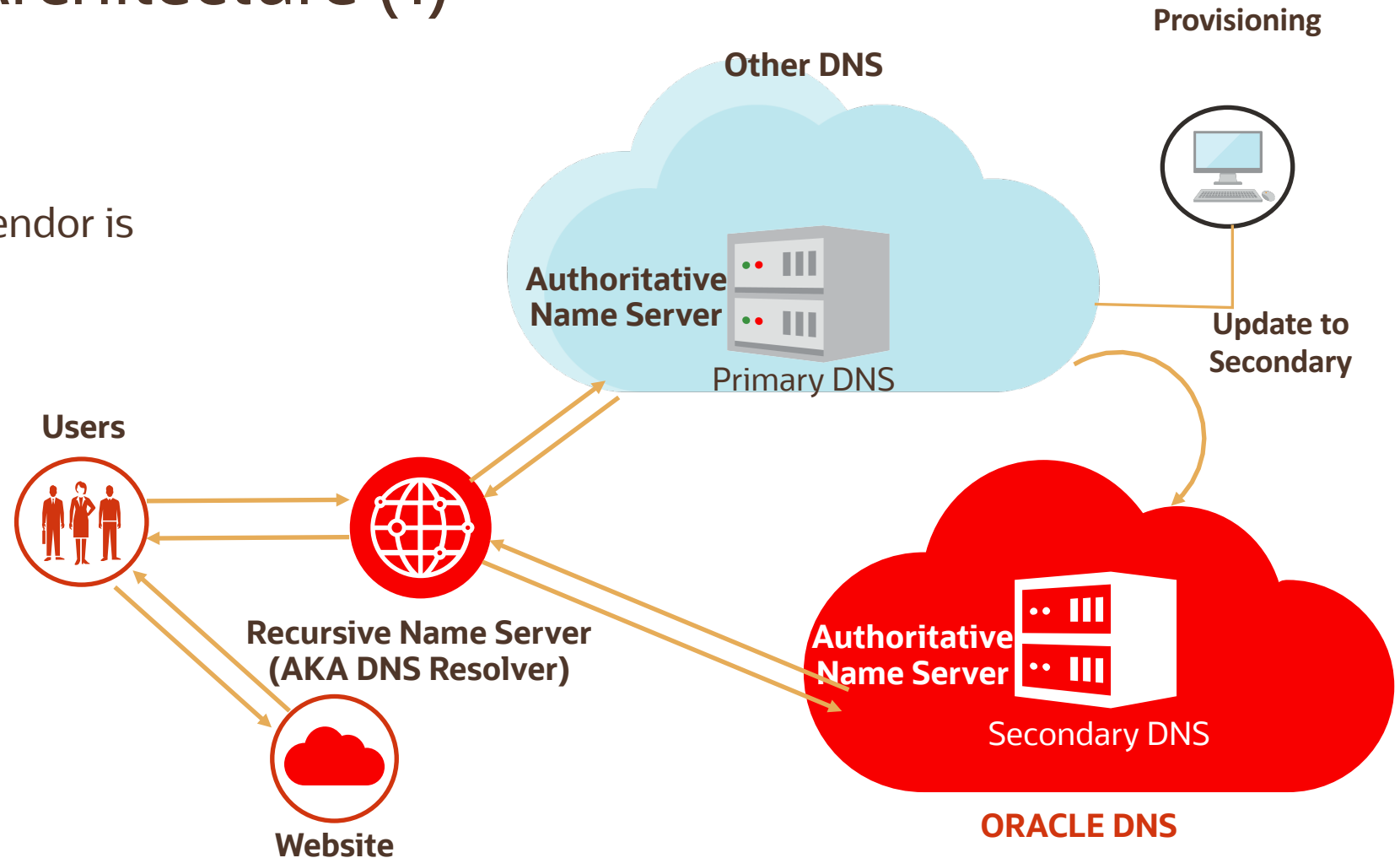
DNS Zone – Use Cases
Secondary DNS Architecture with 'Hidden Master'

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

Other DNS

Provisioning

Authoritative Name Server

Hidden Master DNS
(On-Premises)

Update to Secondary

Users

Firewall

**Recursive Name Server
(AKA DNS Resolver)**

Authoritative Name Server

Secondary DNS
(Public)

ORACLE DNS

Website

ORACLE

Oracle Cloud always free tier:
oracle.com/cloud/free/

OCI training and certification:
https://www.oracle.com/cloud/iaas/training/
https://www.oracle.com/cloud/iaas/training/certification.html
education.oracle.com/oracle-certification-path/pFamily_647

OCI hands-on labs:
ocitraining.qloudable.com/provider/oracle

Oracle learning library videos on YouTube:
youtube.com/user/OracleLearning