

Oracle® Intelligent Communications Orchestration Network

Zoom Phone Premises Peering (BYOC) with Oracle ICON

ORACLE
COMMUNICATIONS

Disclaimer

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

1 Contents

2 REVISION HISTORY 4

3 INTENDED AUDIENCE 4

4 INTRODUCTION 4

4.1 ORACLE® INTELLIGENT COMMUNICATION ORCHESTRATION NETWORK OVERVIEW 4

5 RELATED DOCUMENTATION 5

5.1 ORACLE INTELLIGENT COMMUNICATIONS ORCHESTRATION NETWORK 5

6 ORACLE ICON CONFIGURATION 5

6.1 CUSTOMER ACCOUNT 5

6.1.1 Add Sub Account 5

6.1.2 Add Site 6

6.1.3 Add Number Blocks 7

6.2 SERVICES 8

6.2.1 Connect the Carrier Service 9

6.2.2 Zoom Phone Premise Peering (BYOC-P) 12

6.3 SERVICES PAGE DISPLAY 17

7 ZOOM PREMISE PEERING CONFIGURATION 17

7.1 NETWORK DIAGRAM 18

7.2 ZOOM PHONE-PREMISE PEERING 18

7.2.1 Zoom Phone Configuration 18

7.2.2 Number Management Configuration 19

7.2.3 Session Border Controller Configuration 19

7.2.4 Route Groups 21

7.2.5 Sip Group 22

7.2.6 Phone Numbers 23

7.2.7 User Management 24

7.2.8 Assigning Licenses and Phone Number to Users 24

8 APPENDIX A 27

8.1 ORACLE ICON SOURCE IP ADDRESSES BY REGION 27

8.1.1 Sip Addresses 27

8.1.2 RTP Address 27

2 Revision History

Document Version	Description	Revision Date
1.0	Initial Release	12-05-2025

3 Intended Audience

This document describes how to connect your Zoom Phone Premise Peering (BYOC-P) to Oracle ICON as a Service. This paper is intended for End Users, IT, or telephony professionals.

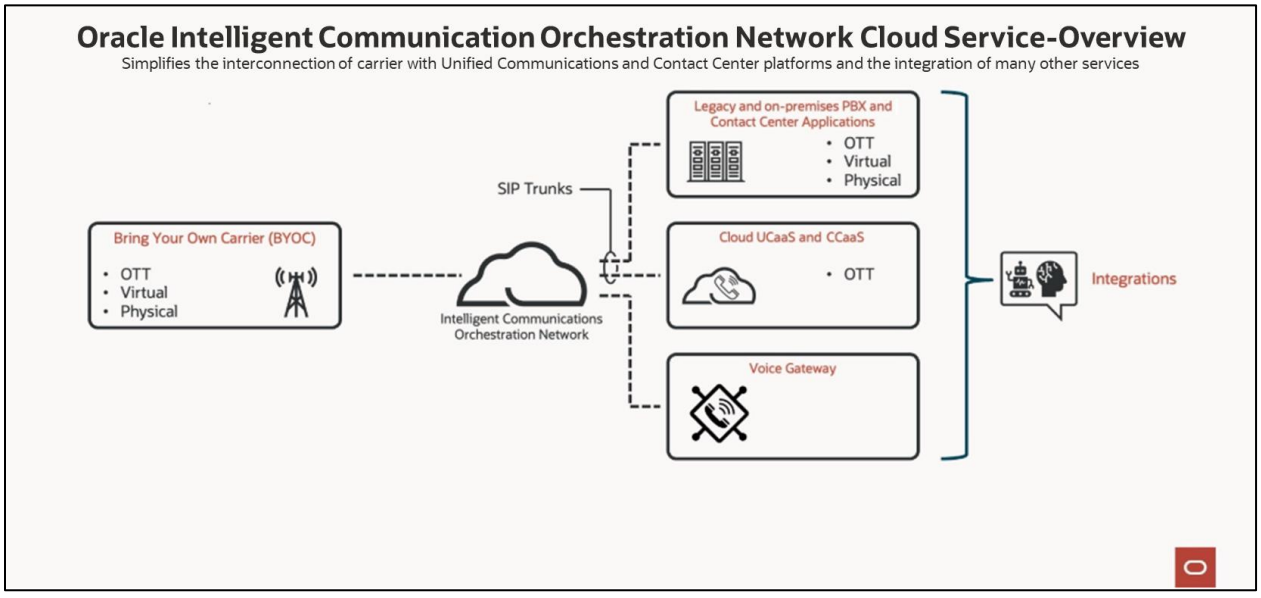
Note: To zoom in on screenshots of Web GUI configuration examples, press Ctrl and +.

4 Introduction

4.1 Oracle® Intelligent Communications Orchestration Network Overview

The Oracle® Intelligent Communications Orchestration Network enables enterprises and Managed Service Providers to connect Unified Communications (UC) and Contact Centers (CC) because the service supports connecting to both on-premises and SaaS based UC and CC solutions. The Oracle® Intelligent Communication Orchestration Network focuses on bringing voice communications services together in one place to relieve you from managing Carrier Service compatibility issues.

Oracle ICON provides numerous features to enable bringing voice communications services together with a single point of management rather than managing each of them independently. The following diagram shows how the features and services interact to provide voice services to the end customer.



Begin by connecting your PSTN services to Oracle® ICON, either virtually or physically. Once this connection is in place, integrate Zoom Phone by configuring SIP trunks within the Oracle® Intelligent Communication Orchestration Network (ICON).
This enables seamless interoperability between Zoom Phone and the ICON system.

5 Related Documentation

5.1 Oracle Intelligent Communications Orchestration Network

- Configuration Process
- Add Sites
- Add Number Blocks Manually
- Connect Services

6 Oracle ICON Configuration

This section outlines the required steps to configure Oracle ICON for integration with Zoom Phone Premise Peering and Carrier services option. You will be guided through the configuration process, including initial setup and the essential parameters to ensure secure and reliable connectivity between Zoom Phone and Oracle ICON.

Note: It is assumed you have established your subscription, configured your account, and completed all required post activation tasks prior to proceeding.

6.1 Customer Account

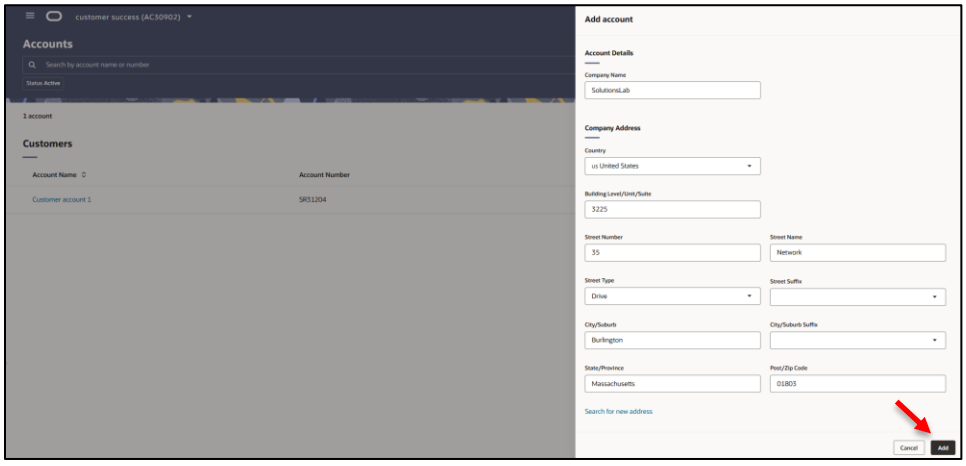
6.1.1 Add Sub Account

To begin the Oracle ICON configuration, the first step is to add a new customer account. This process establishes a secure and distinct environment for the customer's services and resources within Oracle ICON



Under Add Account, enter the following:

- Company Name
- Country
- Address (search or enter manually)



- Click Add at the bottom. When provisioning of the account is completed, click *Refresh* at the bottom of the page.
- You should now see the customer account you just created in the list:



6.1.2 Add Site

A site is an object you create in Oracle Intelligent Communications Orchestration Network that contains information about the physical location using the service. The Sites page lists the sites you create and provides tools for adding and managing sites.

- Top Left Burger Menu, select sites to get to the sites page.

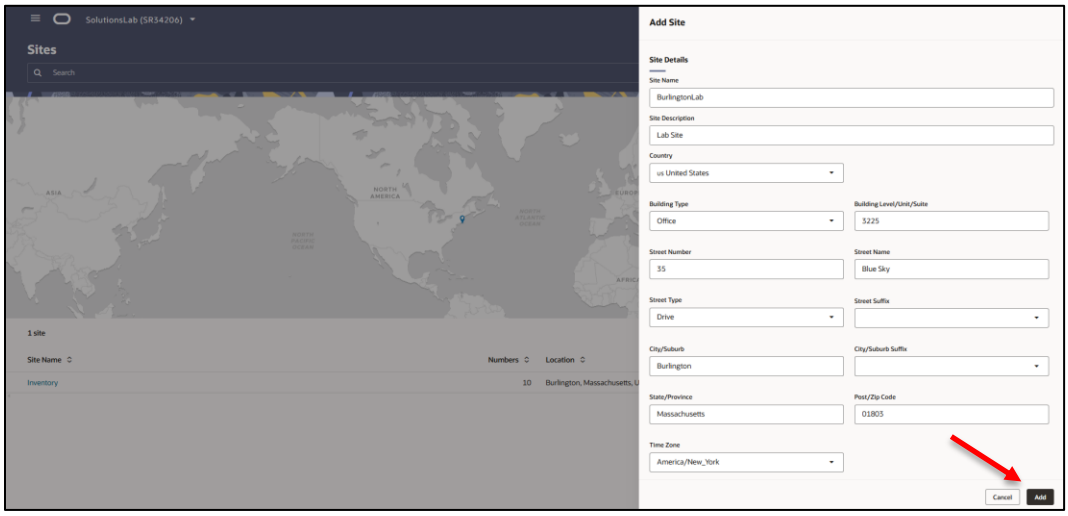


- Top Right, Add Site:



Enter the following information to add a Site:

- Unique Site Name
- Description for the site
- Select a County
- Address (search or enter manually)
- Contact Information

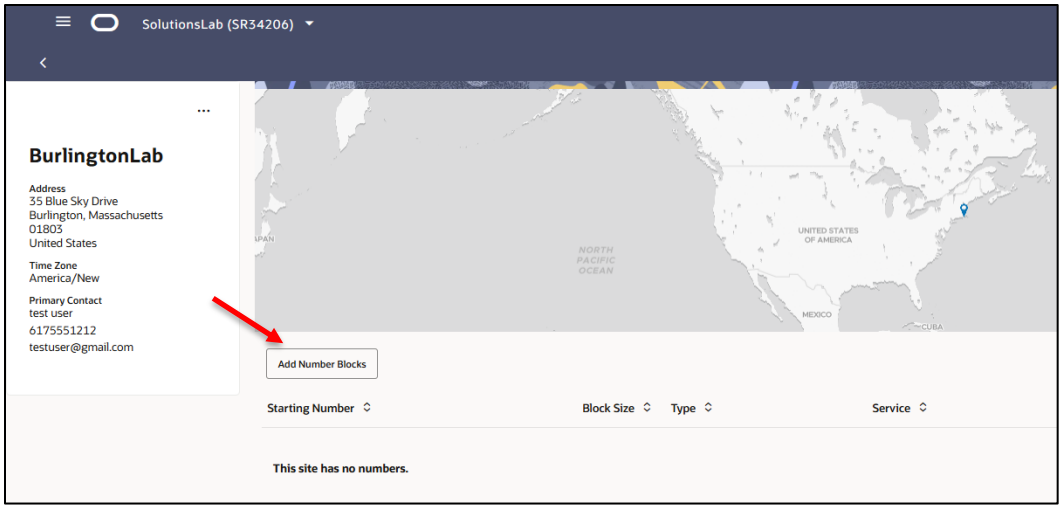


- Click Add at the bottom.

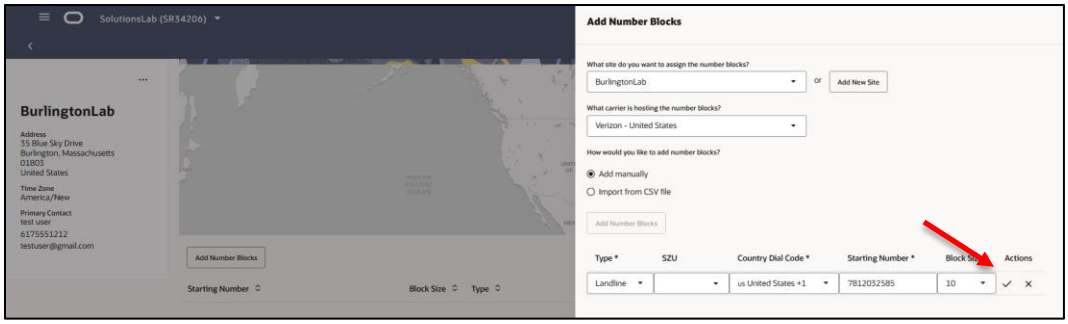


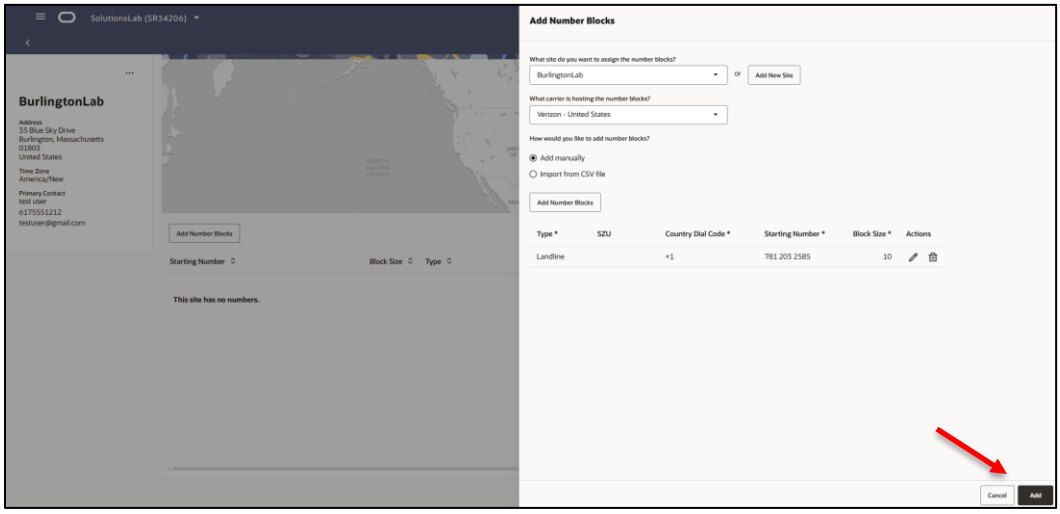
6.1.3 Add Number Blocks

After setting up accounts and sites, you can begin adding number blocks to Oracle ICON. The Numbers Blocks page displays the **Add Number Blocks** button, a table of your number blocks, and Search capability. You can add and manage number blocks from the page.



You can add number blocks by importing a .csv file or manually. For the purposes of this example, we're adding a block of 10 numbers manually to Oracle ICON





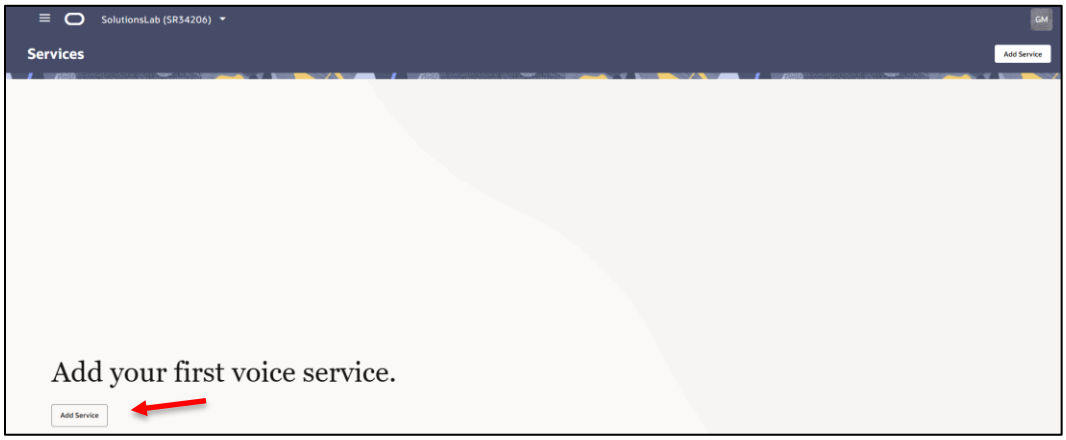
- Click add at the bottom.

6.2 Services

In Oracle ICON, you configure Services as logical objects that connect carriers to the voice, video, and media streaming services you use. The Services page provides tools to configure and manage SIP Trunk connections.

Burger Menu, top left, select Services to open the services page.



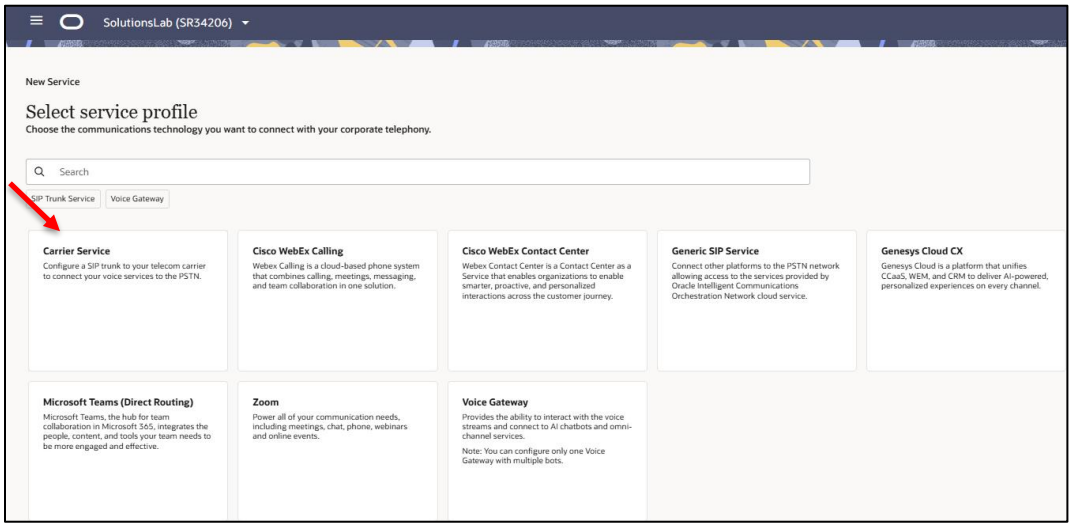


6.2.1 Connect the Carrier Service

To enable SIP trunking connectivity between Zoom Phone and external networks, we'll use the carrier service profile. This integration allows secure and reliable voice traffic routing through Oracle ICON between your carrier service and your organization's Zoom Phone environment.

Follow the guided set up workflow. Complete the steps provided in the navigation pane to the right of the set-up pane.

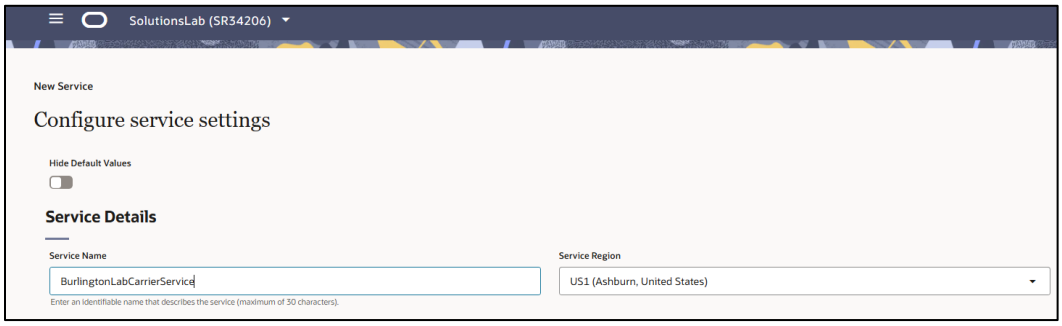
Each time you complete a step and click Continue, the workflow advances to the next step.



- Select Continue:

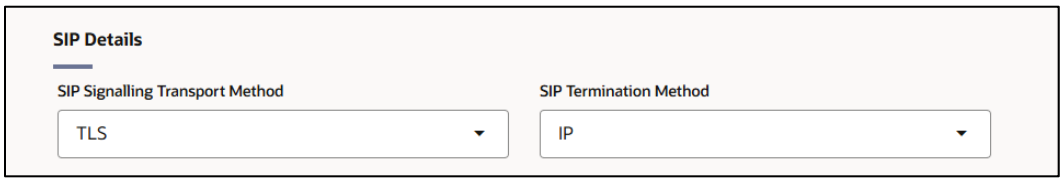
Under Service Settings in the Service Details section, enter the following information:

- Service Name: Assign a unique, descriptive name for your service.
- Service Region: Select the geographical region where the service will be hosted to ensure optimal performance and compliance.



Under SIP Details, provide the following information:

- SIP Signaling Transport Method: Select the protocol (such as TCP, UDP, or TLS) to be used for SIP signaling between Oracle ICON and your telephony equipment.
- SIP Termination Method: Specify how SIP sessions will be routed or terminated, such as to a specific IP address, FQDN, third party registration or authentication.



For the purposes of this example, we're using TLS as the transport method to secure traffic, and IP for Sip Termination Method.

Next, you need to configure ACL's for ICON to allow traffic into the platform. Use the (+) button to set the number of ACL's to use. You should add ACL's for both signaling and media traffic.

Note: You must define the Classless Inter-Domain Routing (CIDR) using the first IP address of the network. If you use any other IP within the sub net as the base for CIDR, Oracle ICON returns an error.

Example: Use

```
192.168.12.0/24
```

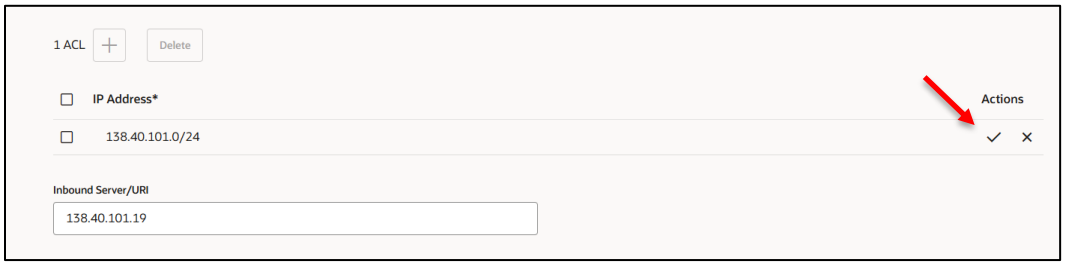
instead of

```
192.168.12.1/24
```

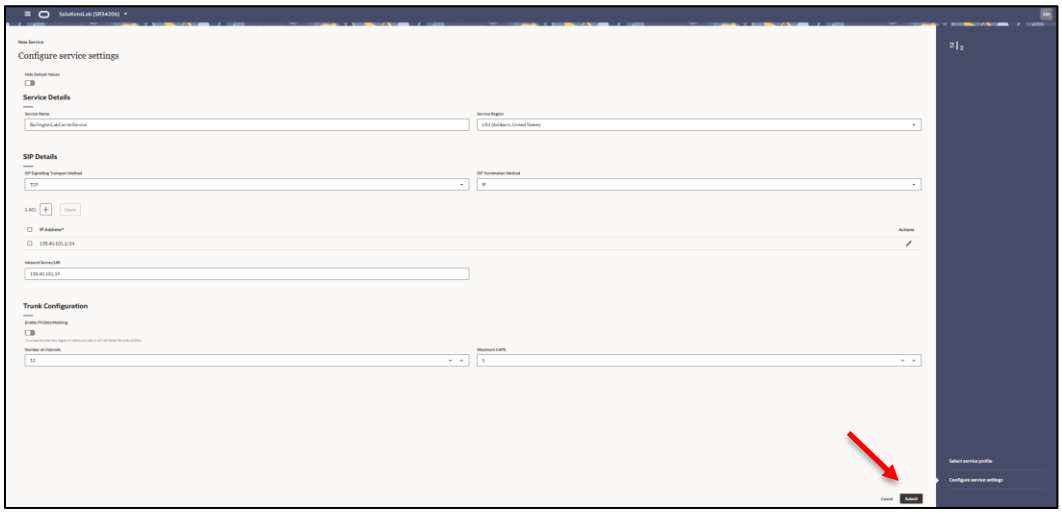
Format the CIDR with an IP address followed by the number of network address prefix bits after the slash. For example: 192.168.1.0/32.

In this example, our signaling and media IP are in the same subnet, so we'll add it to the allow list:

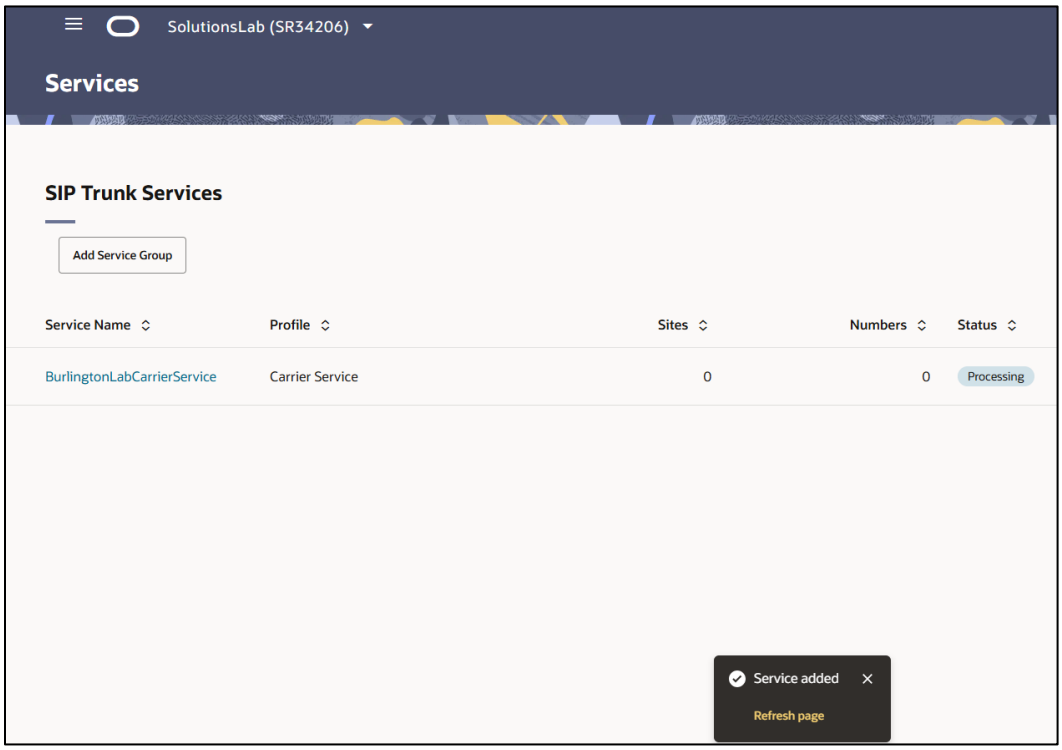
Select the check box next to IP Address to add it.



Also notice the Inbound Server/URI field. This is the endpoint address for incoming calls.

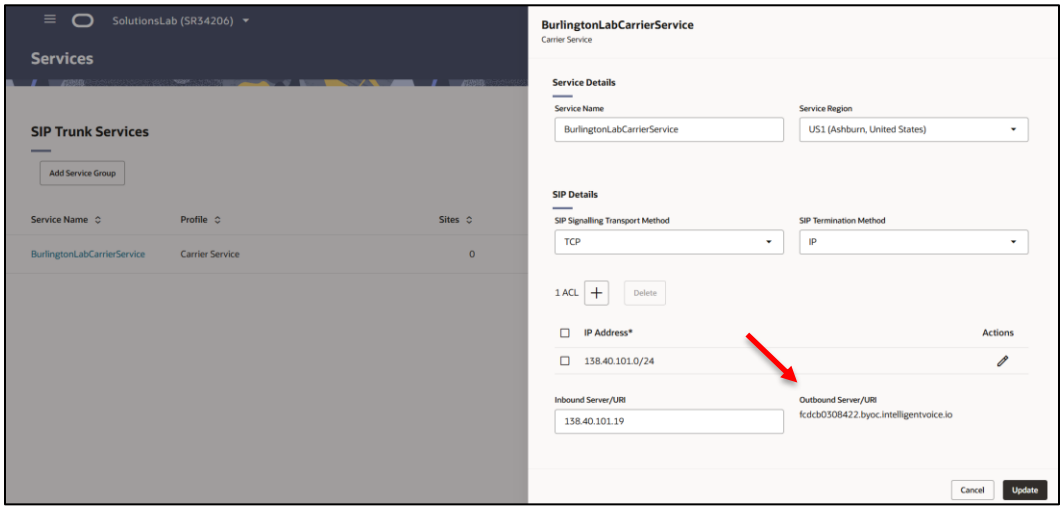


- Click submit at the bottom when completed.



Next, and this is very important:

- Click on the **Carrier Service** you just created to view its configuration details. In the **Outbound Server/URI** field, copy the provided FQDN. This needs to be provided to your Telco or PSTN Sip trunking provider, as it identifies the destination FQDN used for connecting to ICON.
- The Outbound Server URI is automatically assigned by Oracle Intelligent Communications Orchestration Network Cloud Service.



- This concludes the steps required to use the carrier service template in Oracle ICON to configure a connection to Zoom Phone.
- Next, we'll use the Zoom Service profile in ICON to connect Zoom Phone Premise Peering (BYOC-P) to the carrier service we just created.

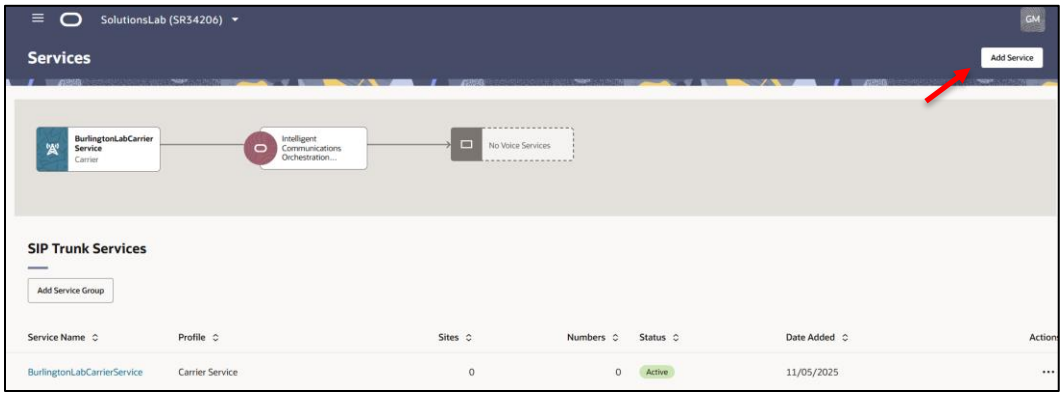
6.2.2 Zoom Phone Premise Peering (BYOC-P)

This section outlines the necessary requirements to configure Zoom Phone with Oracle ICON. Proper configuration ensures secure and reliable SIP trunk connectivity between Zoom and the Oracle ICON service.

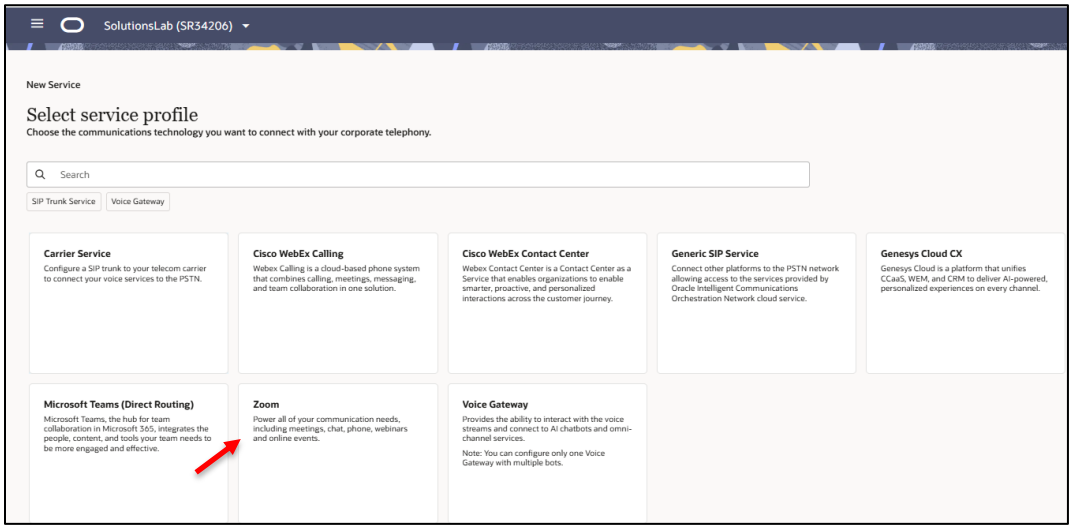
To connect a communications service for use with Oracle® Intelligent Communications Orchestration Network you must select the service, assign number blocks to the service, and configure the service settings.

6.2.2.1 Add Service

From the **Services** landing page, click the Add Service option in the top right:

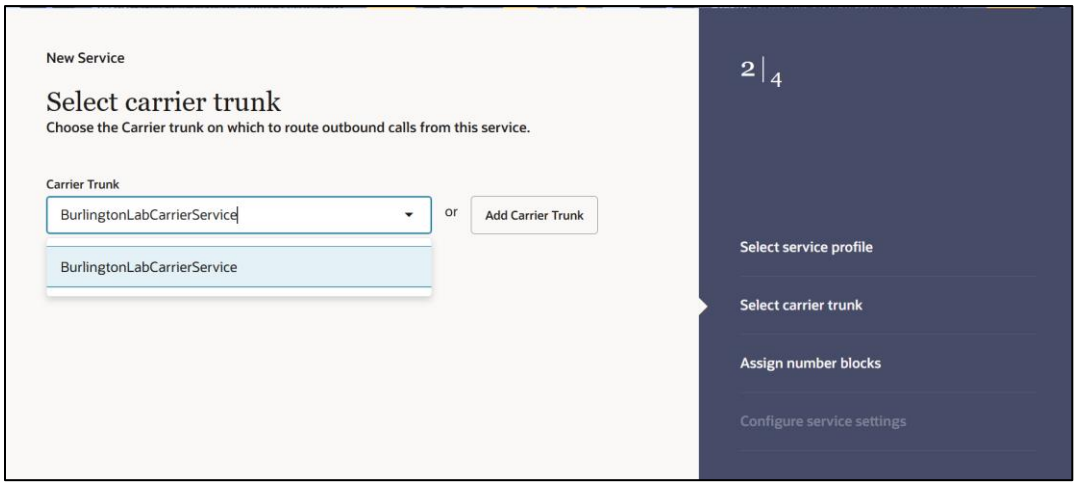


Choose **Zoom** on the Select Services profile Page:



- Select Continue at the bottom.

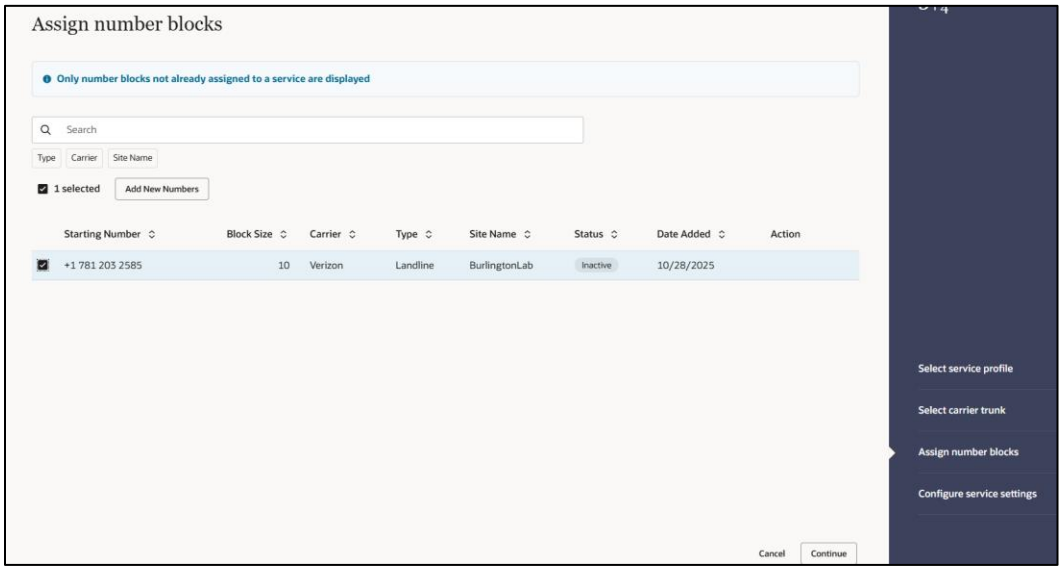
Next, under **Select Carrier trunk**, we'll choose the Carrier Trunk we created earlier in this chapter.



- Select Continue at the bottom.

6.2.2.2 Assign Number Blocks

For this example, we will assign the number block created earlier in the guide to Zoom Phone.

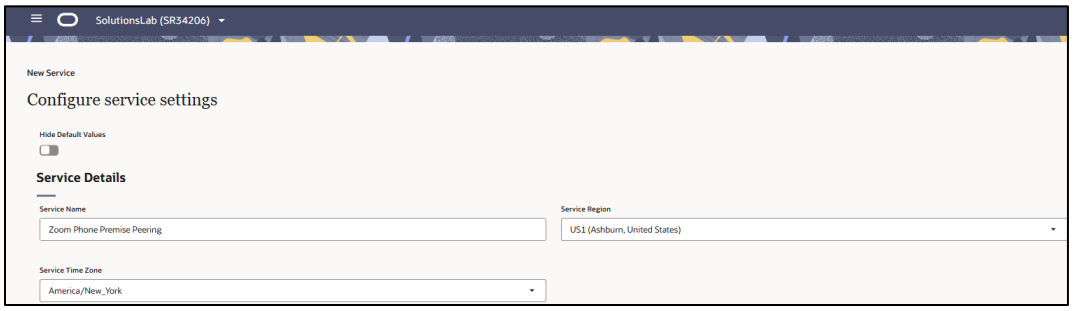


- Click Continue at the bottom.

6.2.2.3 Configure Zoom Service Settings

Under **Service Details**, you need to configure the following:

- Service Name: Enter the name you want for the service.
- Select a Region: Enter the geographic region where the service will operate.
- Select a Time zone: Select the time zone where the caller and callee are located, not necessarily the site time zone.



Under **SIP Details**, you'll need to configure the following parameters.

- Inbound Server URI: Enter the Uniform Resource Identifier (URI) to which Oracle Intelligent Communications Orchestration Network (ICON) Cloud Service sends inbound calls to the platform and voice service. This URI is typically provided by the third-party platform or voice service provider.

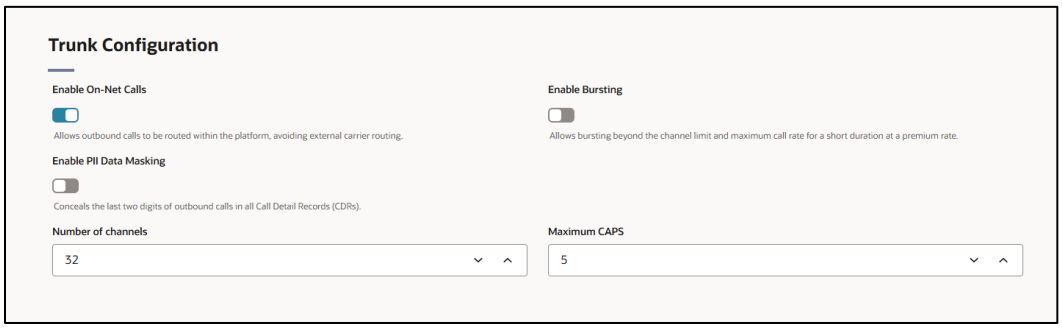
Note: For Zoom integration, use one of the IP addresses listed in your Zoom Route Group provisioning information as the Inbound Server URI.

Zoom requires the use of **TLS** as the transport method to secure traffic, and FQDN for Sip Termination, both are default values.

Please see Hostnames for Customers implementing Mutual TLS verification for the Zoom addresses and FQDN per Region.

Please Note: To ensure proper signaling and media flow between ICON and Zoom, you must whitelist the region-specific IP addresses as specified in Zoom's documentation. These IP addresses should be added to your firewall rules to allow required traffic for signaling and media. Please refer to the Firewall Requirements section of Zoom's official documentation for the most up to date list of IP addresses relevant to your deployment region.

Next, we'll move onto **Trunk Configuration**. For the purposes of this example, we'll leave these at default values. For more information about each of these configurable options, please see the Oracle ICON User Guide under the Services chapter.



Under **Number Configuration**, configure the following:

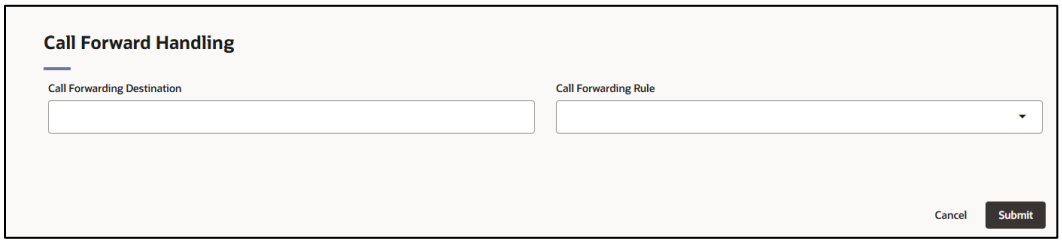
1. Default Outbound CLI: Enter the number you want for the default outbound calling line identifier.

   Note: The number must be in the block you assigned to the service. When you use a number that is not in the block, the number will display unless you select Reject Invalid Number from CLI Call Handling.

1. CLI Error handling: Select an error handling type from the drop-down list.
   - Values: Reject Invalid | Overwrite Invalid | Always.



Leave the **Call Forward Handling** with default value for now.



2. Click Submit at the bottom when finished.

You'll now be returned to the Services Display Page.

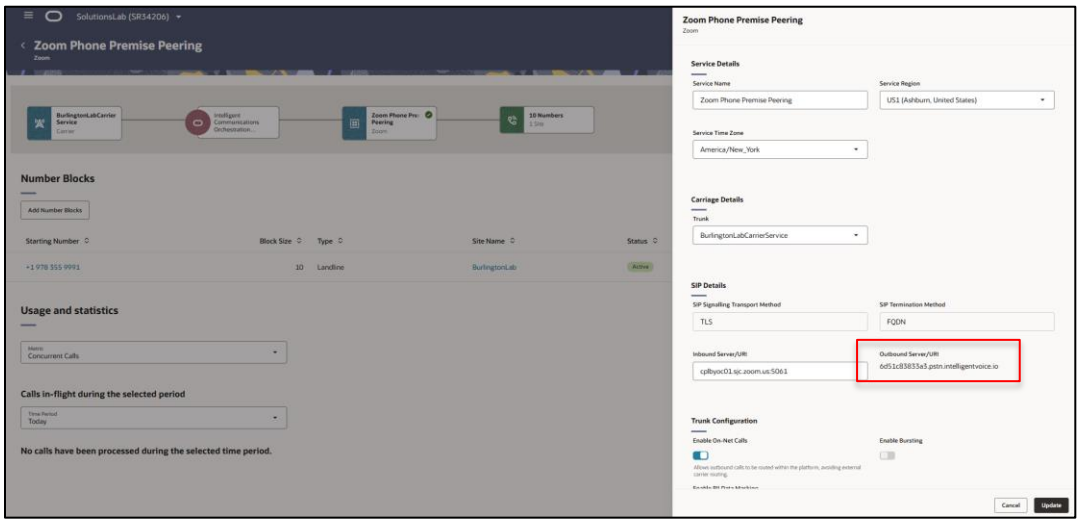




Next, click on the service we just created, Zoom Phone Premise Peering, then **View Configuration**.



This displays the settings drawer.

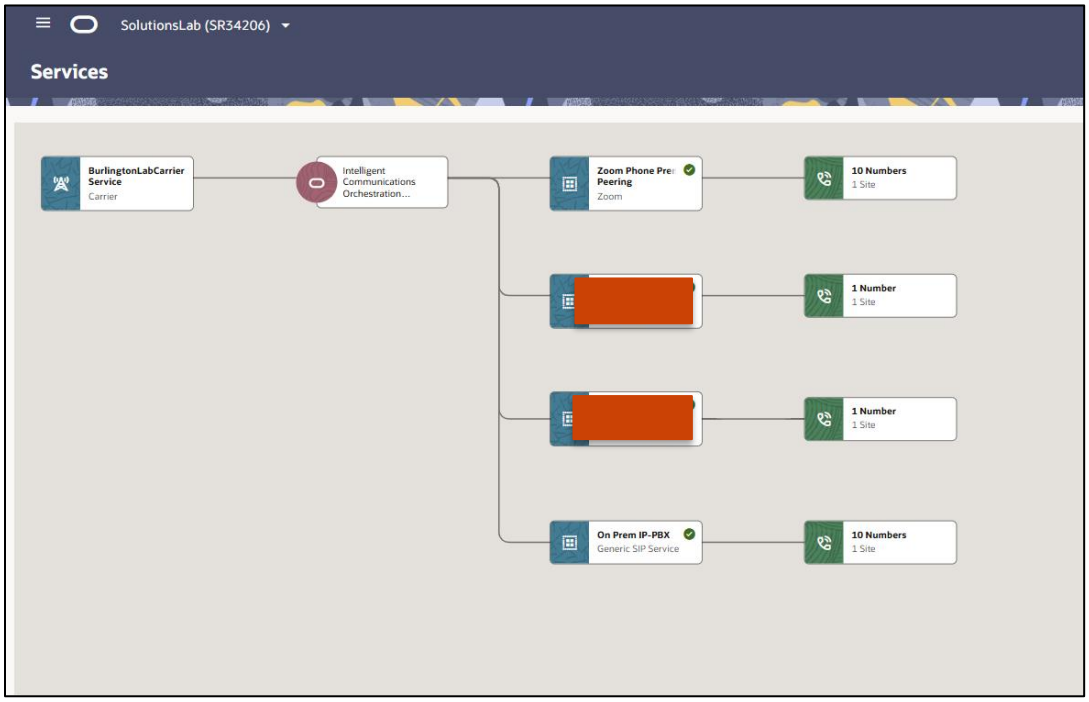


This is where you obtain the **Outbound Server URI** FQDN, which you'll need to configure the SBC in the Zoom admin portal. Detailed steps for configuring Zoom Phone are provided in the following section of this Application Note.

This completes the ICON configuration for both your Carrier Service and Zoom Phone Premise Peering. As mentioned, you will need the **Outbound Server URI** to establish the connection between your Carrier Service, Zoom Phone, and Oracle ICON.

6.3 Services Page Display

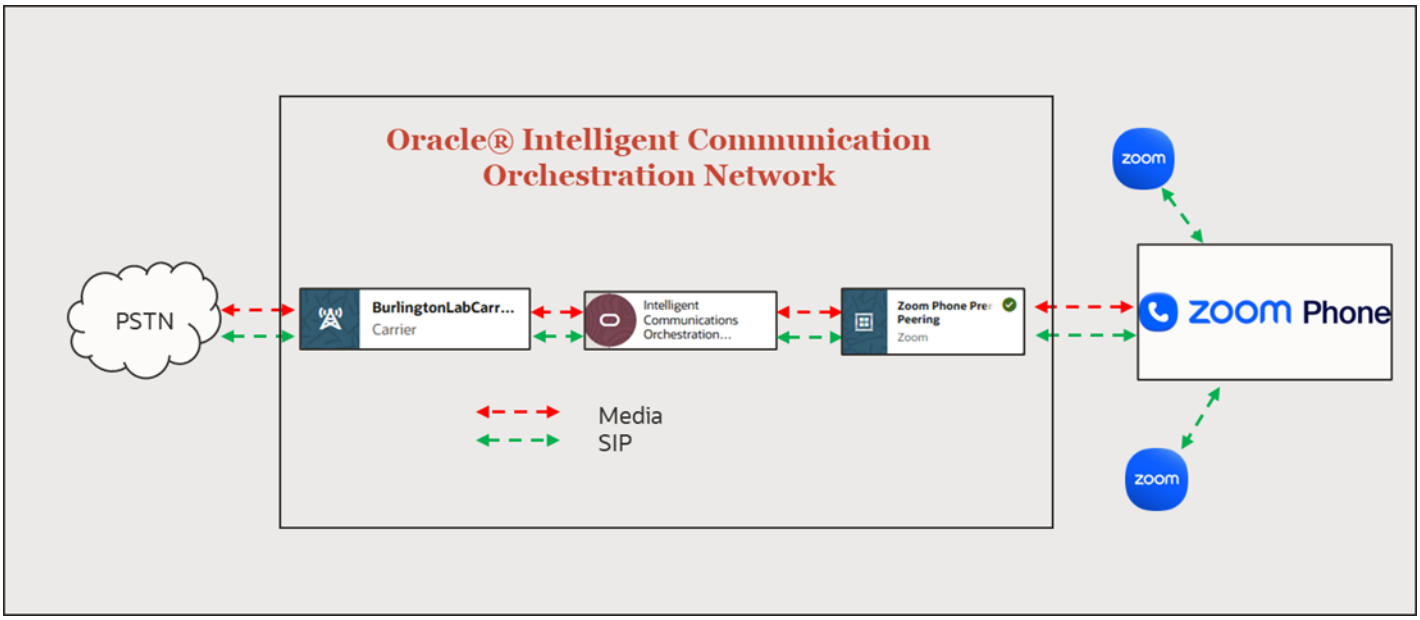
Initially, the **Services** page was empty since no services had been configured. After adding a carrier service and Zoom Phone service, the page now displays a visual map and a table listing attributes for each configured service. Below is an example showing both the carrier service and Zoom Phone Premise Peering. As you add additional components, such as media or other services, they will appear on the right, top, or bottom of your services map.



7 Zoom Premise Peering Configuration

With the Oracle ICON platform and carrier service profile configured, this chapter outlines the steps to integrate with Zoom Premise Peering. You'll use your **outbound server URI** domain in Zoom Admin portal and configure the SBC to enable secure communication between Oracle ICON and Zoom. This section also covers setting up call routing and assigning users to establish connectivity between Zoom Phone and Oracle ICON.

7.1 Network Diagram



7.2 Zoom Phone-Premise Peering

Zoom Phone supports a Bring Your Own Carrier (BYOC) premises peering (BYOC-P) service model, where a business connects their on-premises hardware with Zoom Phone's cloud PBX system.

With this service model, businesses continue to have access to Zoom Phone's cloud PBX features, like Call Queues, Auto Receptionists, number assignment, etc., while the underlying PSTN connections are handled by the company's chosen provider. This service model is nearly identical to Zoom Phone's Cloud Peering model (BYOC-C), with the exception that the customer provides and maintains their own supported voice platform to peer with Zoom Phone's data centers, instead of the underlying carrier.

More information about Zoom Phone Premise Peering, Licensing requirements, add-on's etc..can be found at the link below:

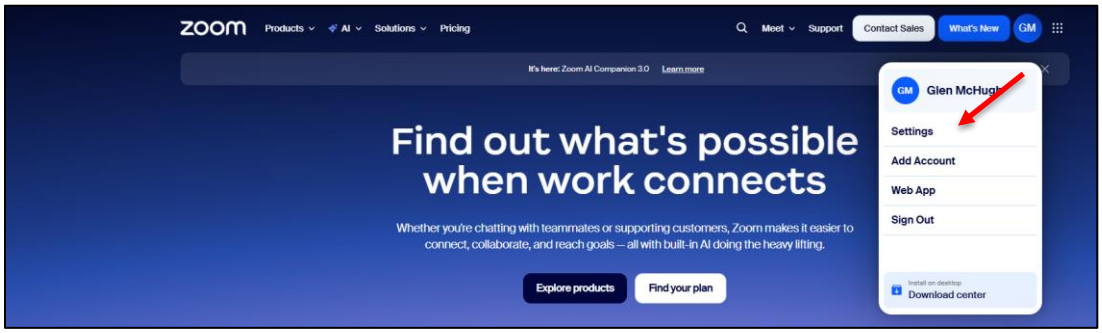
https://library.zoom.com/zoom-workplace/zoom-phone/zoom-phone-bluepaper/overview/bring-your-own-carrier-premises-peering-byoc-p

7.2.1 Zoom Phone Configuration

This Section describes the steps to configure Number Management and BYOC elements to connect Zoom Phone for integration with Oracle® Intelligent Communications Orchestration Network. For detailed assistance with setting up and configuring your Zoom Phone System, please reach out to Zoom Sales: https://zoom.us/contactsales.

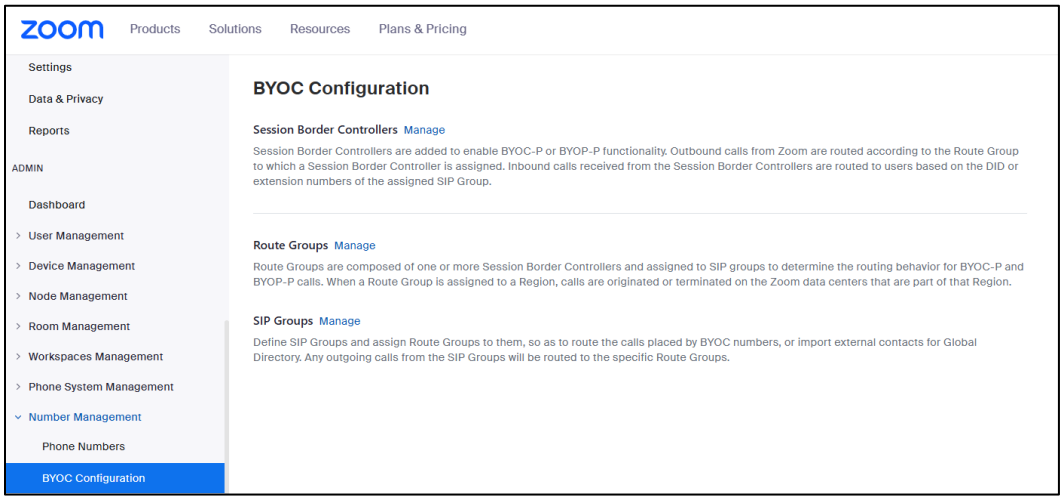
7.2.2 Number Management Configuration

Start by logging into the Zoom Admin Portal at https://www.zoom.com/ and enter your credentials, and go to settings:



In the left-hand menu, navigate to:

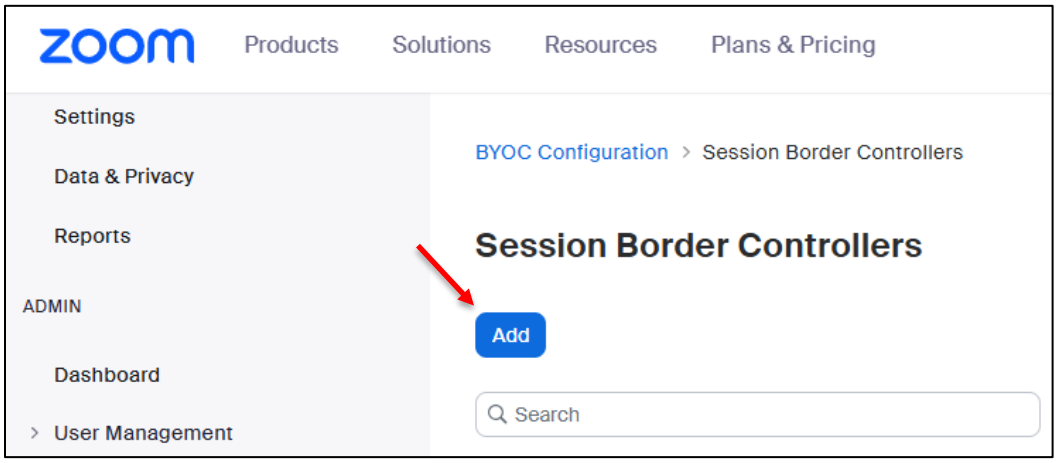
Number Management→BYOC Configuration



7.2.3 Session Border Controller Configuration

Session Border Controllers are added to enable BYOC-P or BYOP-P functionality. Outbound calls from Zoom are routed according to the Route Group to which a Session Border Controller is assigned. Inbound calls received from the Session Border Controllers are routed to users based on the DID or extension numbers of the assigned SIP Group.

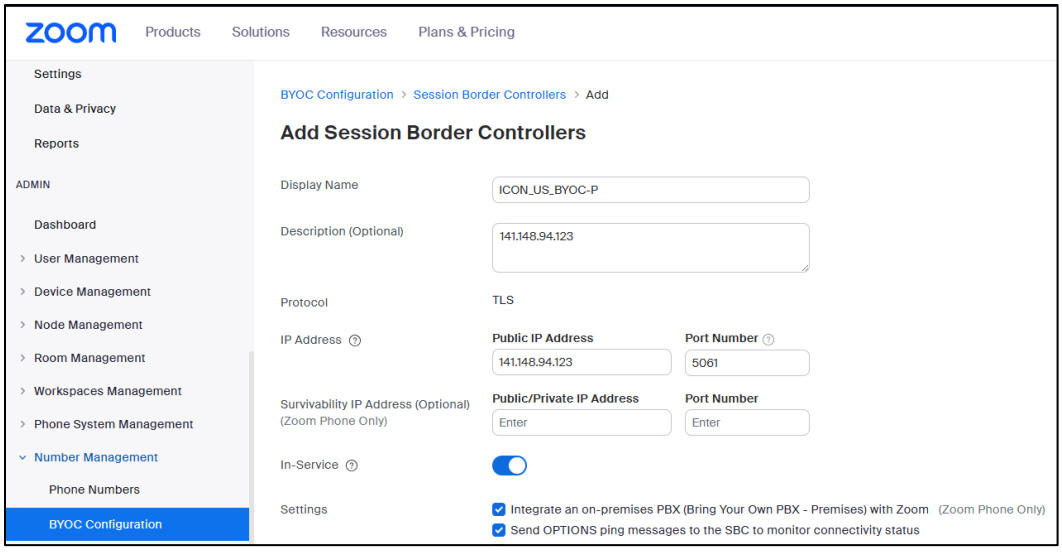
Click on **Manage** Next to Session Border Controllers, then **Click Add**



Use the table below as an example on how to setup your SBC to create a secure SIP Trunk with Oracle ICON:

Note: for the purposes of this example, we'll use an IP address from the ICON US Region. For more information, see section 8.1 Oracle ICON Source IP Addresses by Region

Config Parameter	Value
Display Name	ICON_US_BYOC-P
Description	(Optional)
Public IP address	141.148.94.123
Port	5061
In Service	☑
Settings	
Integrate an on-premises PBX…..(Zoom Phone Only)	☑
Send Sip OPTIONS ping messages…..	☑



Note: All IP addresses from the ICON service must be configured as Session Border Controllers (SBCs) in the Zoom portal. An efficient method is to resolve the Outbound Server/URI generated for the ICON service, then configure all resulting IPs as SBCs within the Zoom portal.

- Click Save at the bottom of each when finished.

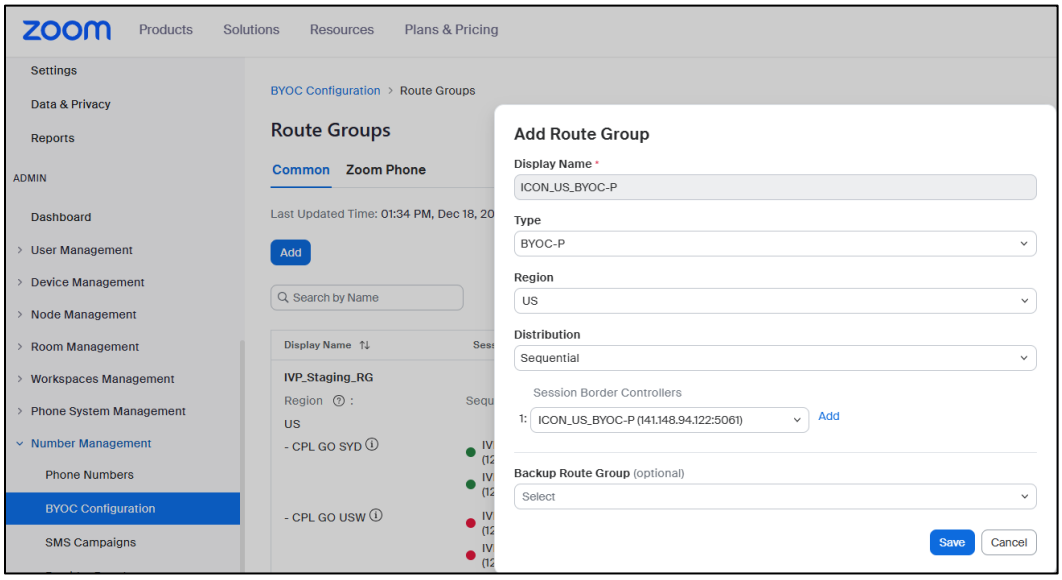
7.2.4 Route Groups

Route Groups are composed of one or more Session Border Controllers and assigned to SIP groups to determine the routing behavior for BYOC-P and BYOP-P calls. When a Route Group is assigned to a Region, calls are originated or terminated on the Zoom data centers that are part of that Region.

Click **Manage** Next to Route Groups on the BYOC Configuration landing page, Select **Common**, then click **Add.**

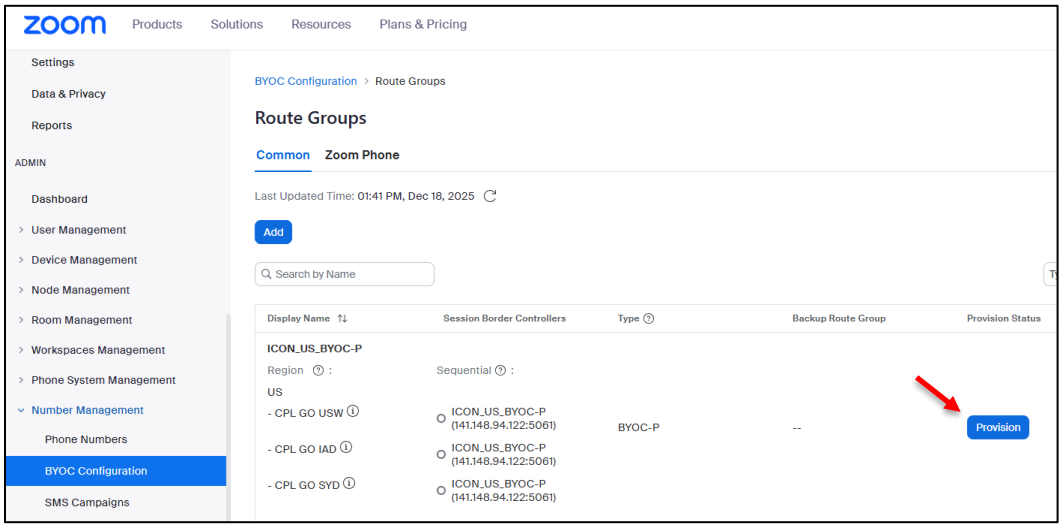
You need to add the following information to your route group configuration:

- Display Name: Unique Identifier for your Route Group
- Type: BYOC-P
- Region: Select your Zoom Region, for the purposes of this example, we select US
- Distribution: Sequential
- Session Border Controller: Select the Session Border Controller we just created.



- Click Save at the bottom.

This will bring you back to the Route Group Landing page where we must provision the route group.



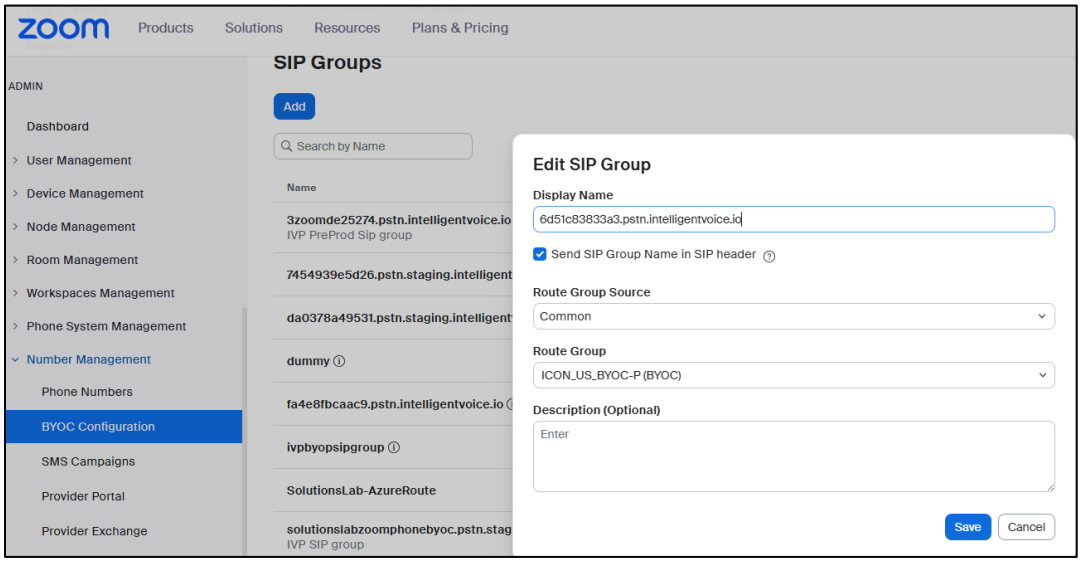
Note: The Route Groups and SBC settings entered here are being provisioned on our infrastructure. It may take up to 24 hours for the provisioning to complete.

7.2.5 Sip Group

Define SIP Groups and assign Route Groups to them, to route the calls placed by BYOC numbers or import external contacts for Global Directory. Any outgoing calls from the SIP Groups will be routed to the specific Route Groups.

Click **Manage** Next to Sip Groups on the BYOC Configuration landing page, then Click **Add**:

- Display Name: You must use the **Outbound Server/URI** created by ICON when configuring the [Zoom Profile.]
- You must select the check box next to **Send SIP Group Name in SIP header**.
- Route Group Source: Common
- Route Group: Select the Route Group you just created, ICON_US_BYOC-P



- Click **Save** at the bottom.

Now we'll move on to adding phone numbers to Zoom Phone.

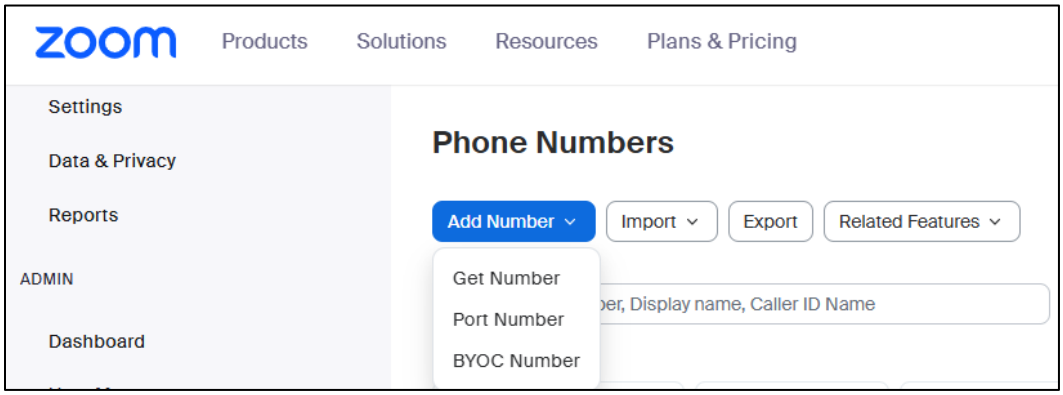
7.2.6 Phone Numbers

Next, we need to add phone numbers to Zoom phone, attach each number to a sip group for routing purposes.

To add Phone Numbers, in the left side menu,

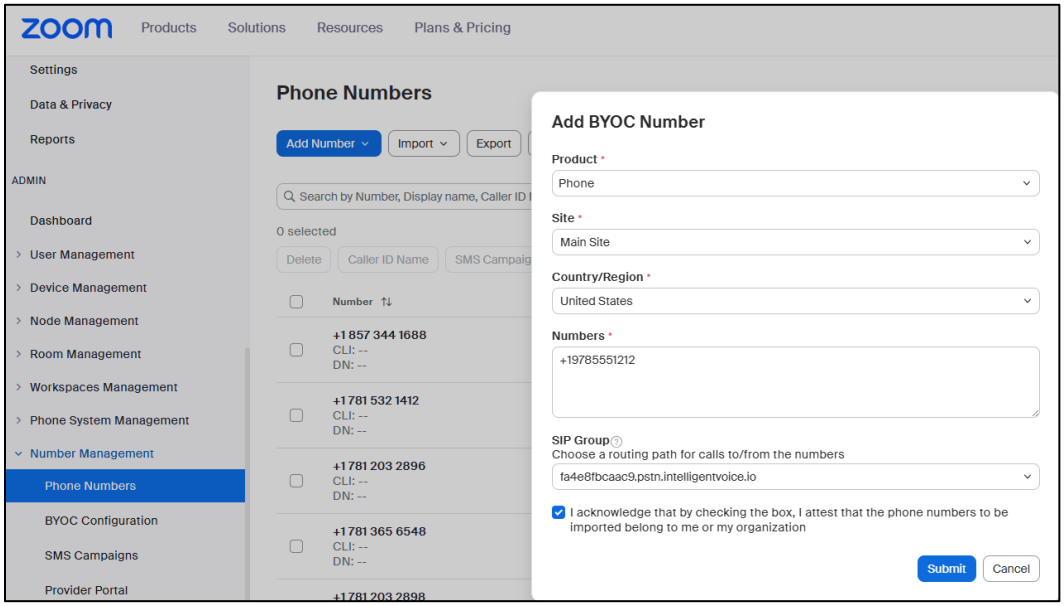
Number Management→Phone Numbers

In the **Add Numbers** drop down, select **BYOC Number**:



Use the information below as an example to import numbers into Zoom Phone:

- Product: Phone
- Site: Select Site
- County/Region: for this example, we selected United States
- Numbers: Add the numbers you created for your Oracle ICON Sip Service.
- Sip Group: Choose the Sip Group we just created from the drop down.
- Check the box to acknowledge ownership of the numbers

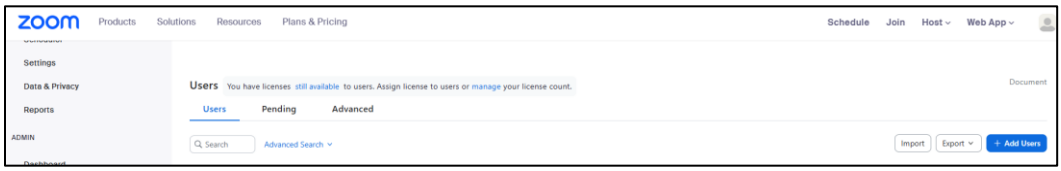


- Click Save at the bottom when finished.

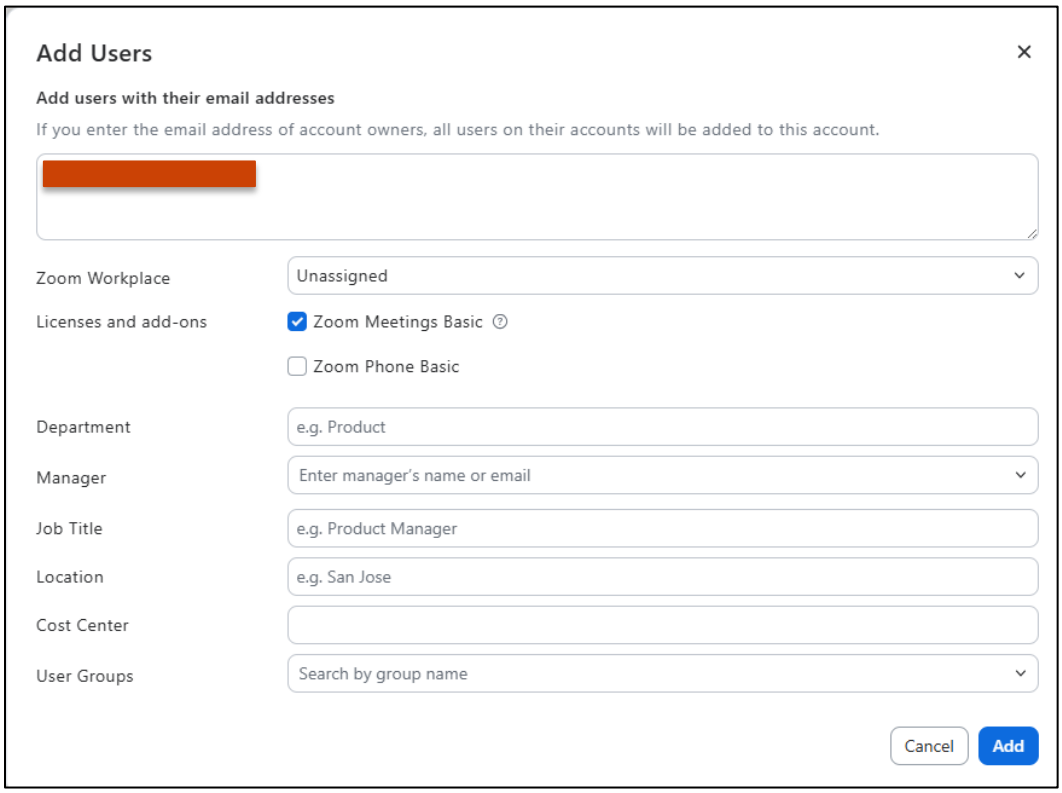
7.2.7 User Management

To Add Users to your Zoom Tenant, on the left side menu, select
User Management→Users

- Click **Add Users**



Enter the email address of the user (all other fields are optional) and click add at the bottom.



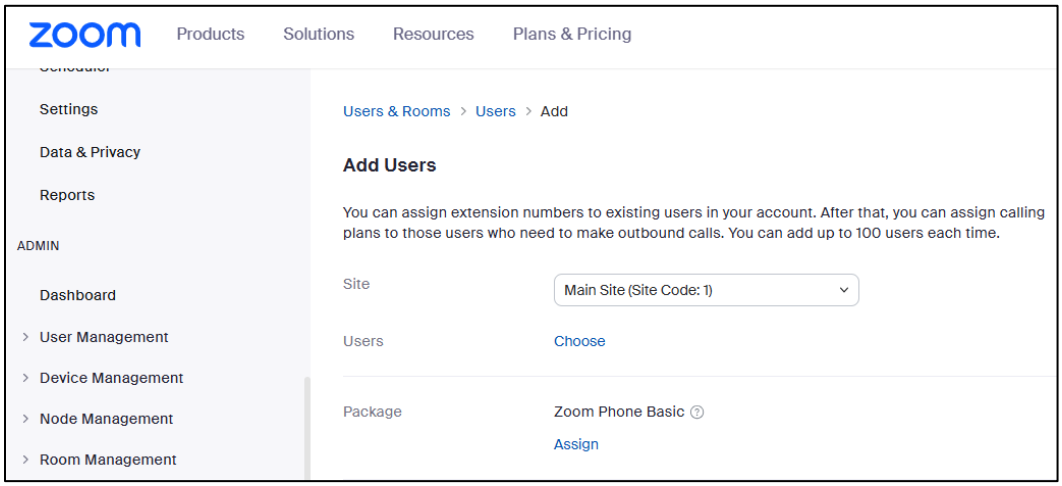
The added user will receive an email to active their account. Once activated, we can move on to assigning licenses and a phone number to the user.

7.2.8 Assigning Licenses and Phone Number to Users

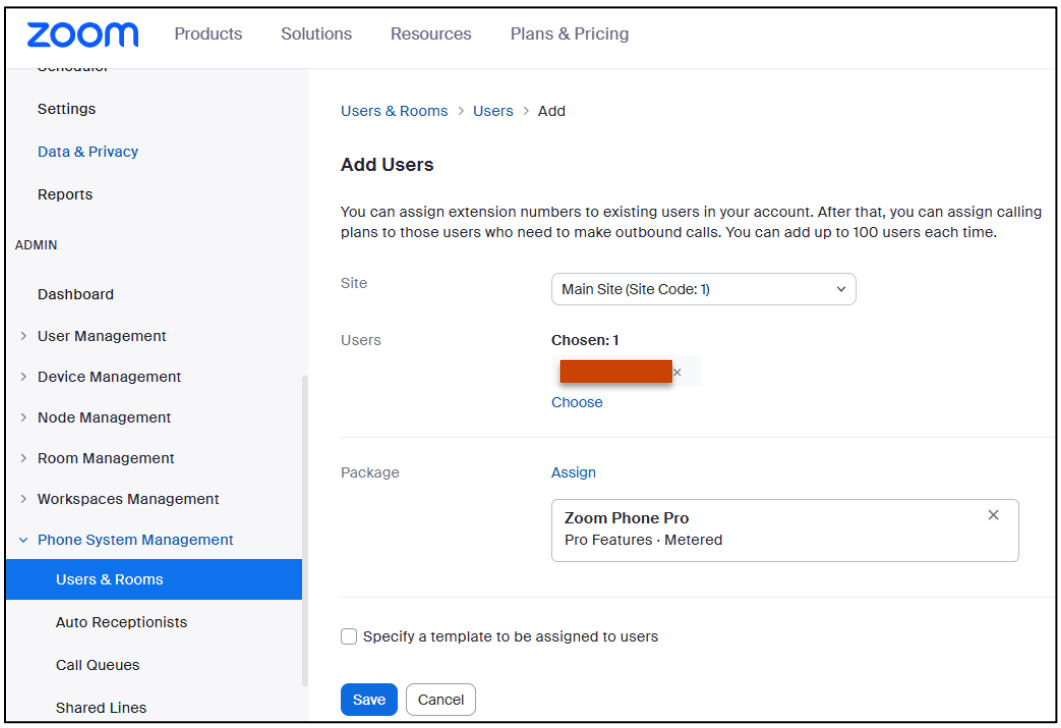
Now that the user has activated their Zoom Account, we can go ahead and assign Phone System licenses and phone number to the user.

Left Side Menu: Phone System→Users and Rooms,

- Click **Add**

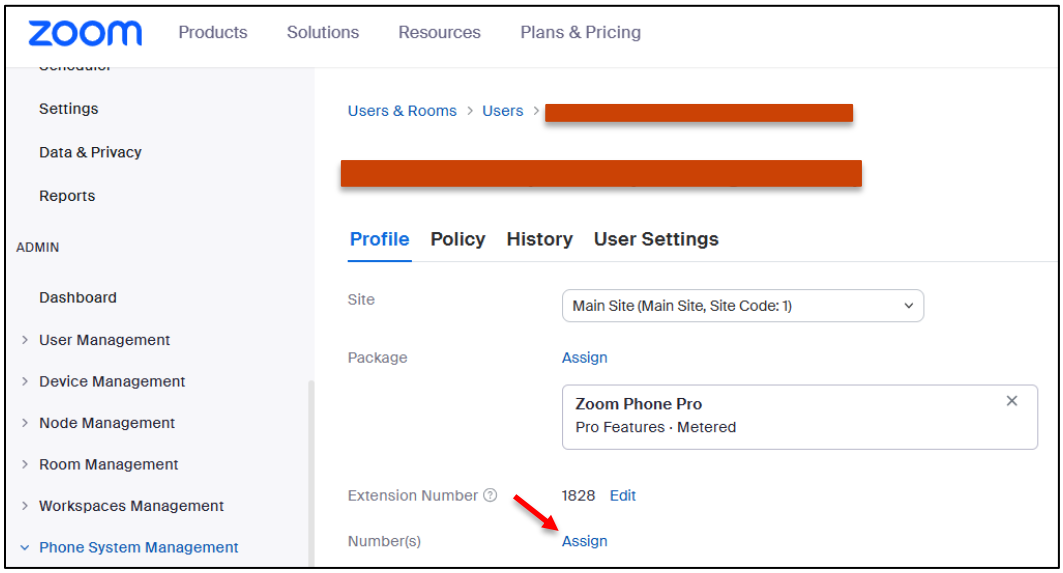


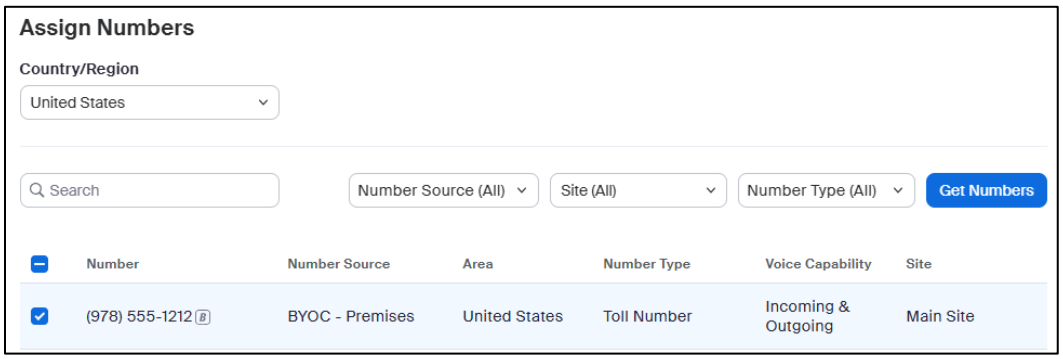
Choose the Email address of the user you want to add and assign packages:



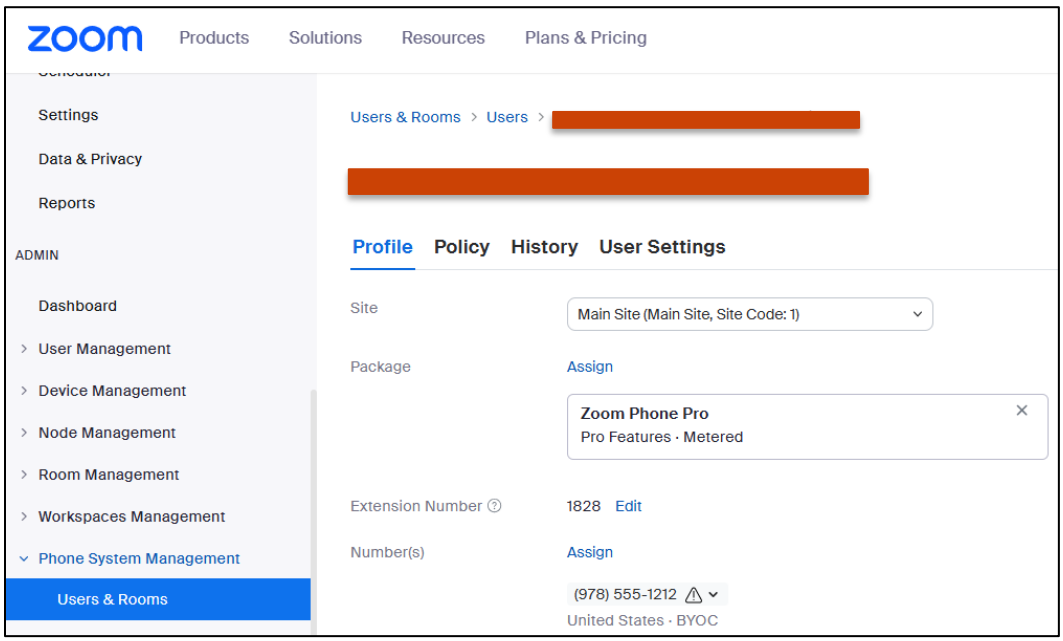
- Click Save at the bottom.

Next, on the Users & Rooms landing page, click on the name of the user you just added to assign a phone number:





- Click **Confirm** at the bottom.



This concludes the basic configuration requirements for connecting your Zoom Phone Service with Oracle ICON. You are now ready to move forward with a reliable and efficient integration.

8 Appendix A

8.1 Oracle ICON Source IP Addresses by Region

8.1.1 Sip Addresses

We send SIP traffic from the following IP addresses depending on the region.

Sip Addresses	United States	United Kingdom	Europe
Elastic SIP Trunking (Carrier Service)	• 141.148.94.123 • 141.148.19.91 • 141.148.19.207	• 132.226.133.10 • 141.147.102.157 • 130.162.174.170	• 158.180.40.23 • 79.76.125.226 • 92.5.45.176
BYOC SIP Trunks (UCaaS/CCaaS)	• 157.151.185.240 • 129.80.163.26 • 129.80.237.143	• 141.147.93.137 • 79.72.90.134 • 79.72.74.167	• 141.144.252.12 • 152.70.25.132 • 92.5.21.254

8.1.2 RTP Address

We use the following IPv4 addresses to anchor media in each Region:

RTP Addresses	United States	United Kingdom	Europe
RTP Addresses	• 152.70.194.115 • 129.158.41.18 • 129.80.0.17 • 141.148.65.154 • 129.80.168.72 • 129.153.11.4	• 145.241.255.210 • 145.241.215.174 • 141.147.86.5 • 141.147.72.109 • 193.123.190.92 • 141.147.108.181	• 92.5.74.51 • 92.5.81.148 • 89.168.85.244 • 89.168.101.27 • 129.159.31.17 • 138.2.190.141

Oracle Corporation, World Headquarters
2300 Oracle Way
Austin, TX 78741, USA

Worldwide Inquiries
Phone: +1.650.506.7000 or
Phone: +1.800.392.2999

ORACLE

CONNECT WITH US

blogs.oracle.com/oracle
facebook.com/oracle
twitter.com/oracle
oracle.com

Integrated Cloud Applications & Platform Services

Copyright © 2025, Oracle and/or its affiliates. All rights reserved. This document is provided *for* information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group. 0615