

# **Gear up your PBX**

## **Cut Costs, Boost Profits**

Version 20160226

**Bridges**



# Goal of this Module

- Creating Bridges
  - Master - Tunneled
  - Slave - Tunneled
- Using Bridges
  - Calls between Extensions
  - Meshed Setup
  - Presence Information

# Concept of Bridges

- Bridges **connect** remote PBXs together
- Define Bridge ends (either Master or Slave)
- Tunneled Bridge – sends traffic using the 3CX Tunnel Protocol

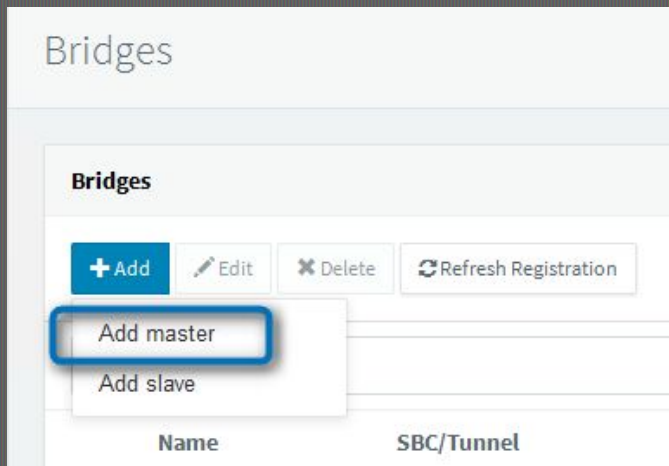


# Concept of Master Bridge

- Master Bridge
  - **Listens** for incoming connections from Slave Bridge
- Tunneled
  - Listens on **Tunnel Port** (default 5090)

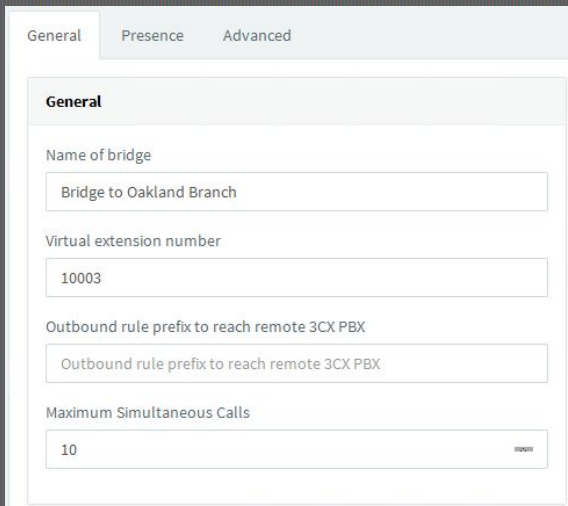
# Creating a Bridge - Master

- Management Console → Bridges → Add → **Add Master**



# Creating a Bridge - Master

- Bridge Name → Shows up in the Presence Screen
- Virtual Extension Number → Must **match** Slave Bridge
- Outbound Rule Prefix
  - Prefix to reach other side of Bridge
  - Can be blank depending on setup
- Max Sim Calls
  - Number of calls allowed
  - Counts towards License



The screenshot shows a configuration interface with three tabs: 'General', 'Presence', and 'Advanced'. The 'General' tab is active and contains the following fields:

- Name of bridge:** A text input field containing 'Bridge to Oakland Branch'.
- Virtual extension number:** A text input field containing '10003'.
- Outbound rule prefix to reach remote 3CX PBX:** A text input field containing 'Outbound rule prefix to reach remote 3CX PBX'.
- Maximum Simultaneous Calls:** A text input field containing '10'.


# Creating a Bridge - Master

- Authentication
  - Password Slave will use to register
  - Security: Must be **complex**!
- Tunneled Bridge
  - “Remote PBX uses Tunnel” **checked**
  - **IP** and **Tunnel Port** of Slave

**Authentication**

This "Master" Bridge will receive registrations only. The other PBX must register with this password:

••••••••



**Remote PBX**

☒ Remote PBX uses SBC/Tunnel Connection

Remote **PBX IP** and **Port**

192.168.9.145

5090

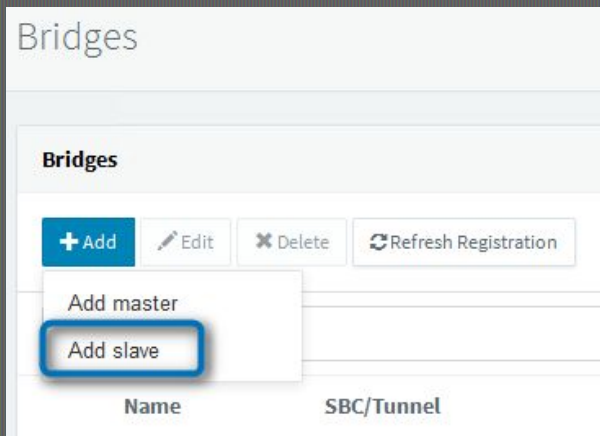
# Concept of Slave Bridge

- Slave Bridge
  - **Initiates** the REGISTER to the Master Bridge
- Tunneled
  - Uses **Tunnel Port** (default 5090)



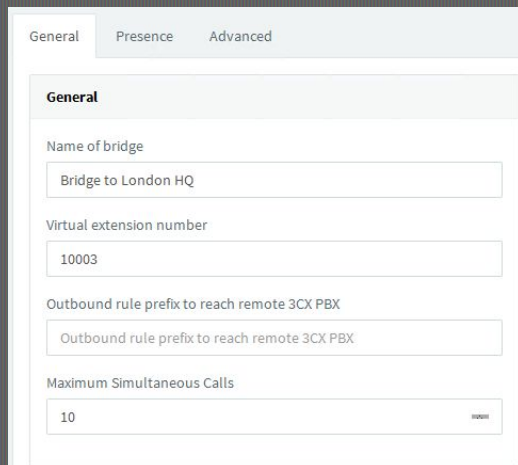
# Concept of Slave Bridge

- Management Console → Bridges → Add → **Add Slave**



# Creating a Bridge - Slave

- Bridge Name
  - Shows up in the Presence Screen
- Virtual Extension Number
  - Must **match** Master Bridge
- Outbound Rule Prefix
  - Prefix to reach other side of Bridge
  - Can be blank depending on setup
- Max Sim Calls
  - Number of calls allowed
  - Counts towards License



The screenshot shows a web-based configuration interface for a bridge. At the top, there are three tabs: 'General', 'Presence', and 'Advanced'. The 'General' tab is selected and highlighted. Below the tabs, the 'General' section is titled. It contains four input fields with labels and placeholder text:

- Name of bridge:** The input field contains the text 'Bridge to London HQ'.
- Virtual extension number:** The input field contains the text '10003'.
- Outbound rule prefix to reach remote 3CX PBX:** The input field contains the text 'Outbound rule prefix to reach remote 3CX PBX'.
- Maximum Simultaneous Calls:** The input field contains the text '10'.

# Creating a Bridge - Slave


- Authentication
  - Password to register to Master
  - Must match Master Bridge settings
- Tunneled Bridge
  - “Remote PBX uses Tunnel” checked
  - IP and Tunnel Port of Master

**Authentication**

This "Slave" Bridge will register with the remote system. In Direct (UDP) mode, all traffic will be sent via UDP and will use multiple ports

Authentication Password

••••••••



**Remote PBX**

☒ Remote PBX uses SBC/Tunnel Connection


Remote **PBX IP** and **Port**


10.0.25.180

5090

# Checking Bridge Status

- Master System Management Console → Bridges
- Slave System Management Console → Bridges

Bridges						
<div><div>+ Add</div><div>Edit</div><div>Delete</div><div>Refresh Registration</div></div>						
<div>Search ...</div>						
Name	SBC/Tunnel	Type	Sim calls	Bridge ID	Prefix	
 Bridge to Oakland	Yes	Master	10	10003		<div>×</div>

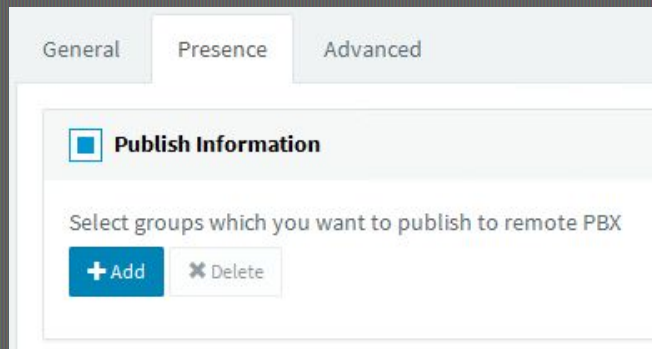
Bridges						
<div><div>+ Add</div><div>Edit</div><div>Delete</div><div>Refresh Registration</div></div>						
<div>Search ...</div>						
Name	SBC/Tunnel	Type	Sim calls	Bridge ID	Prefix	
 Bridge to London HQ	Yes	Slave (SBC)	10	10003		<div>×</div>

# Concept of Bridge Presence Information

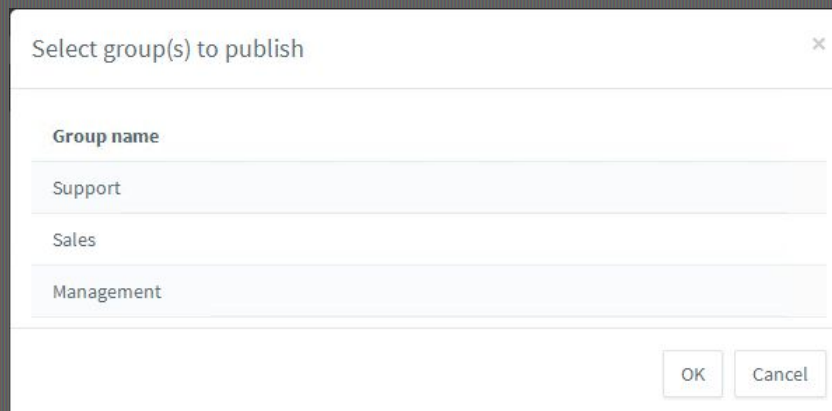
- Monitoring Bridged System's Extension Status
  - Publish Information → Sends Information to Remote Bridge
  - Receive information → Receives Information from Remote Bridge
  - Monitor Remote System's Extensions with 3CX Client tabs

# Publish Presence Information

- Bridge settings → **Presence** tab → Publish Information → **Add**
- Select the **Local** Extension Groups you want to publish to Remote PBX



The screenshot shows the 'Publish Information' tab selected within the 'Presence' section of the Bridge settings. The tab is titled 'Publish Information' with a blue square icon. Below the title, there is a text prompt 'Select groups which you want to publish to remote PBX'. At the bottom of the tab, there are two buttons: a blue '+ Add' button and a grey 'X Delete' button.



The screenshot shows a dialog box titled 'Select group(s) to publish' with a close button (X) in the top right corner. The dialog contains a list of extension groups under the heading 'Group name'. The groups listed are 'Support', 'Sales', and 'Management'. At the bottom right of the dialog, there are 'OK' and 'Cancel' buttons.

# Receive Presence Information

- Bridge settings → **Presence** tab → Receive Information  
→ PRO License only  
→ Set **FQDN** and **HTTPS** port of Remote PBX
- Press **Add**  
→ Select the **Local** Extensions that will see the Remote PBX Presence

Select allowed extensions to add

Search ...

Extension	First Name	Last Name
100		
101		
102		
103		
104		

1 2

OK Cancel

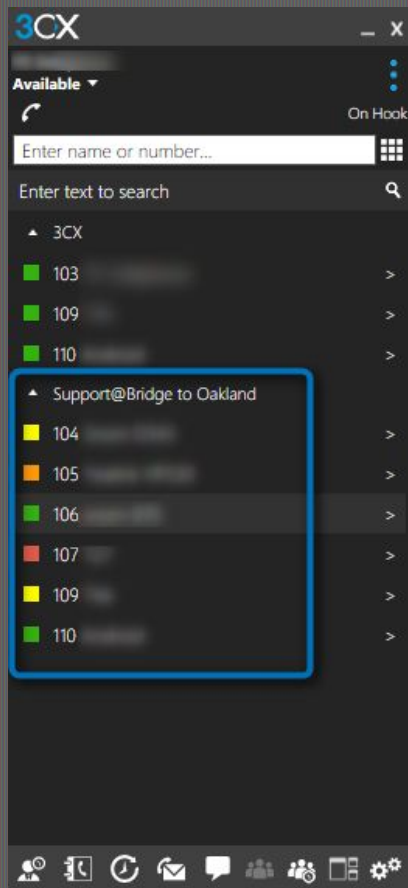
☒ **Receive Information (PRO)**

Remote PBX Server **Hostname or IP** and **HTTPS Port**

**mybusiness.contoso.com:5001**

# 3CX Client and Presence Information

- Extension Status across
  - Multiple Bridges possible
  - Each Remote System in a different header





# Planning Ahead for Extension Numbers

- Scenario 1 - Numbering Plan:
  - Master Bridge → 4-digit extensions (e.g. 1xxx)
  - Slave Bridge → 4-digit extensions (e.g. 2xxx)
- Calls - Outbound Rules
- Master Bridge to Slave Bridge
  - Prefix: 2
  - Length: 4
- Slave Bridge to Master Bridge
  - Prefix: 1
  - Length: 4

No Prefix in Bridge Settings required

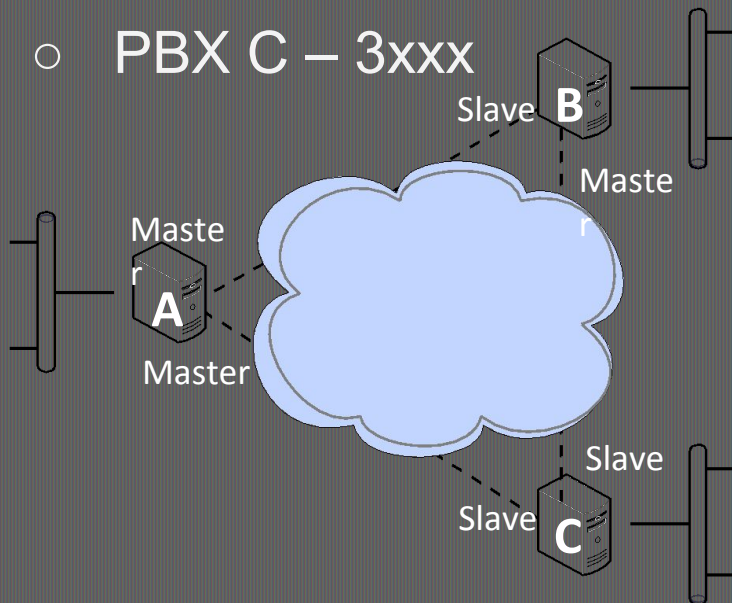
# Planning Ahead for Extension Numbers

- Scenario 1 - No Numbering Plan:
  - Master Bridge → 4-digit extensions
  - Slave Bridge → 4-digit extensions
  - Extension Numbers may overlap
- Calls - Outbound Rules
  - Master Bridge to Slave Bridge
    - Prefix: 9
    - Length: 5
    - Strip Digits: 1
  - Slave Bridge to Master Bridge
    - Prefix: 9
    - Length: 5
    - Strip Digits: 1

In Bridge Settings enter Prefix 9

# Meshed Bridge Example 3-Way Configuration

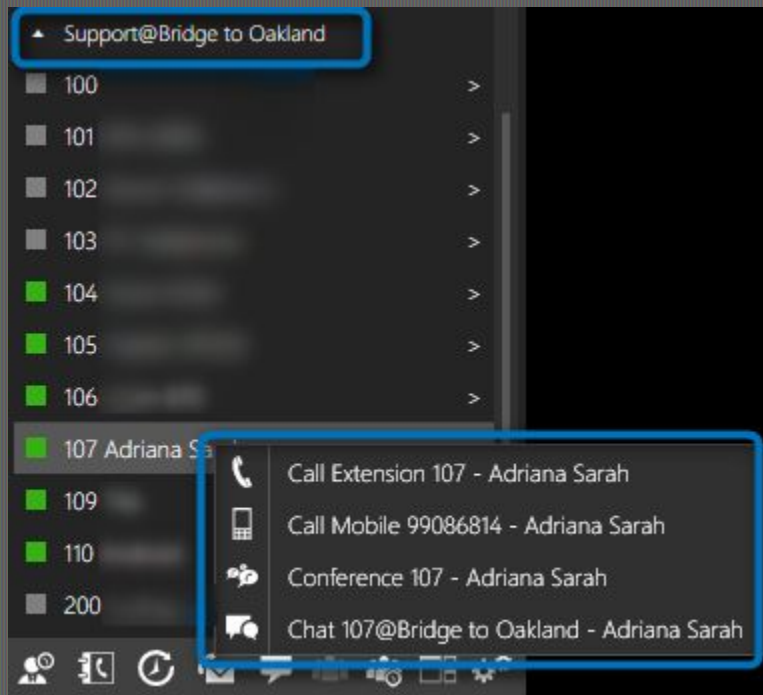
- Configure 6 connections
  - A=Master B=Slave
  - A=Master C=Slave
  - B=Master C=Slave
- Numbering Plan
  - PBX A – 1xxx
  - PBX B – 2xxx
  - PBX C – 3xxx




# Meshed Bridge Outbound Rules

- PBX A
  - Rule for Prefix="2", Length=4, Strip=0 → Route to PBX B
  - Rule for Prefix="3", Length=4, Strip=0 → Route to PBX C
- PBX B
  - Rule for Prefix="1", Length=4, Strip=0 → Route to PBX A
  - Rule for Prefix="3", Length=4, Strip=0 → Route to PBX C
- PBX C
  - Rule for Prefix="1", Length=4, Strip=0 → Route to PBX A
  - Rule for Prefix="2", Length=4, Strip=0 → Route to PBX B
  - Backup Route For PBX B via PBX A
    - Route 2 for Prefix="2", Length=4, Strip=0 → Route to PBX A

# Pro Edition – Cross-Office Presence





# **Gear up your PBX**

## **Cut Costs, Boost Profits**

**More Training Material at:**  
**[www.3CX.com/3CXAcademy](http://www.3CX.com/3CXAcademy)**

