



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

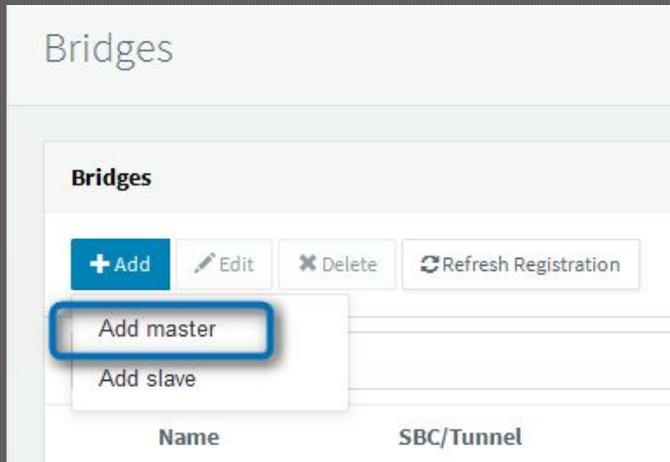


Concept of Master Bridge

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

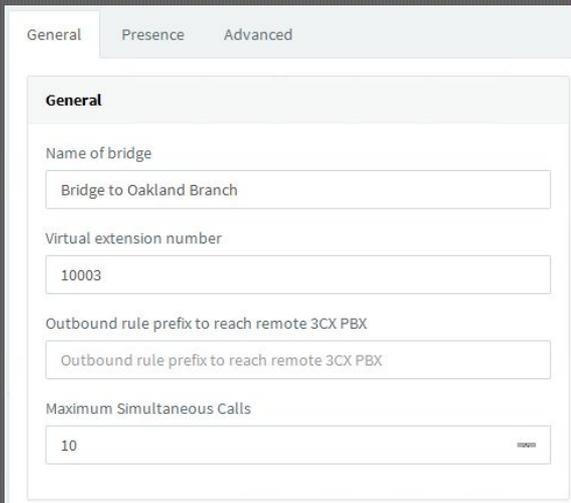
Creating a Bridge - Master

- 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:** Bridge to Oakland Branch
- Virtual extension number:** 10003
- Outbound rule prefix to reach remote 3CX PBX:** Outbound rule prefix to reach remote 3CX PBX
- Maximum Simultaneous Calls:** 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**

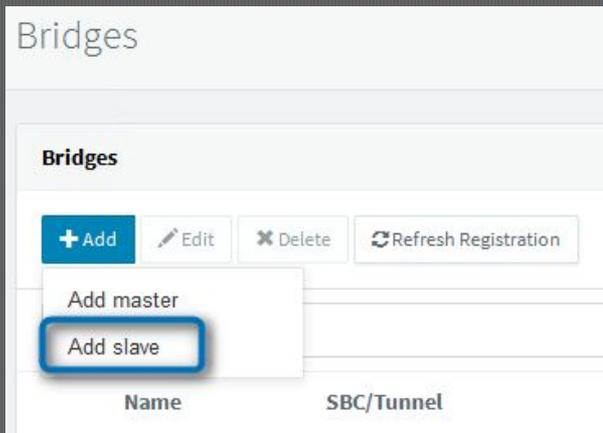
192.168.9.145 5090

Concept of Slave Bridge

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

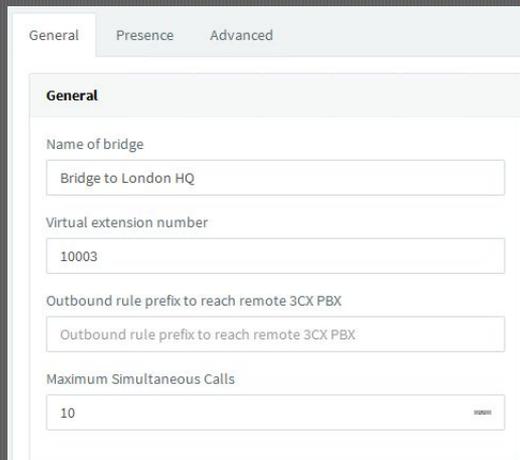
Concept of Slave Bridge

- 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 interface with three tabs: "General", "Presence", and "Advanced". The "General" tab is active. Below the tabs, there is a "General" section with four input fields:

- Name of bridge:** Bridge to London HQ
- Virtual extension number:** 10003
- Outbound rule prefix to reach remote 3CX PBX:** Outbound rule prefix to reach remote 3CX PBX
- Maximum Simultaneous Calls:** 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**

<input type="text" value="10.0.25.180"/>	<input type="text" value="5090"/>
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Checking Bridge Status

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

Bridges

[+ Add](#) [Edit](#) [Delete](#) [Refresh Registration](#)

Search ...

Name	SBC/Tunnel	Type	Sim calls	Bridge ID	Prefix
 Bridge to Oakland	Yes	Master	10	10003	x

Bridges

[+ Add](#) [Edit](#) [Delete](#) [Refresh Registration](#)

Search ...

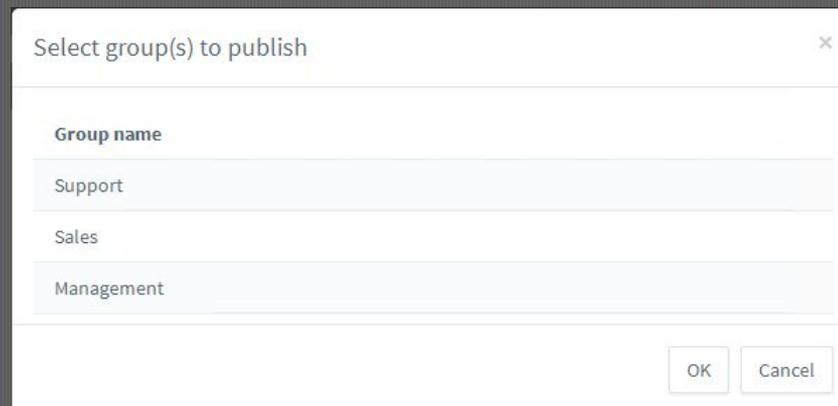
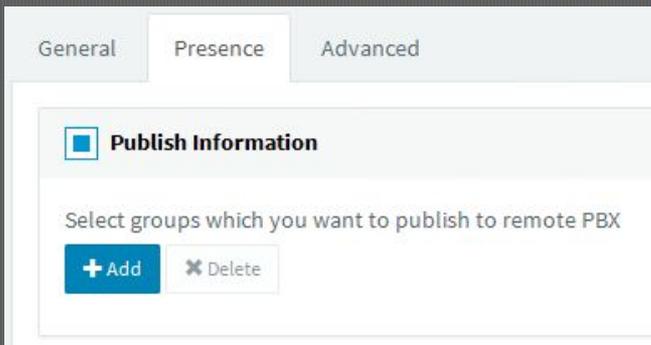
Name	SBC/Tunnel	Type	Sim calls	Bridge ID	Prefix
 Bridge to London HQ	Yes	Slave (SBC)	10	10003	x

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



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

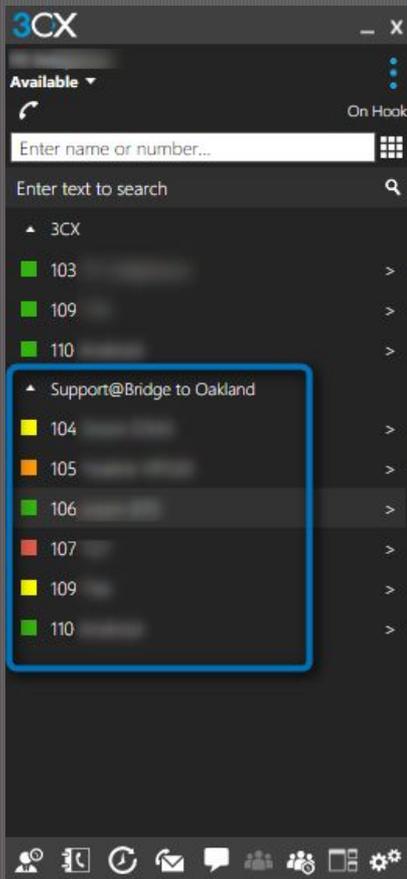
Receive Information (PRO)

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

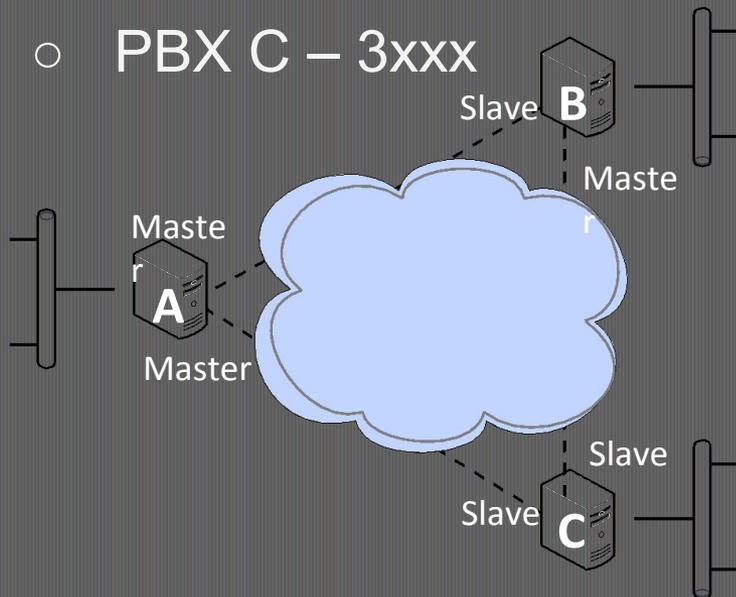
Planning Ahead for Extension Numbers

- 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

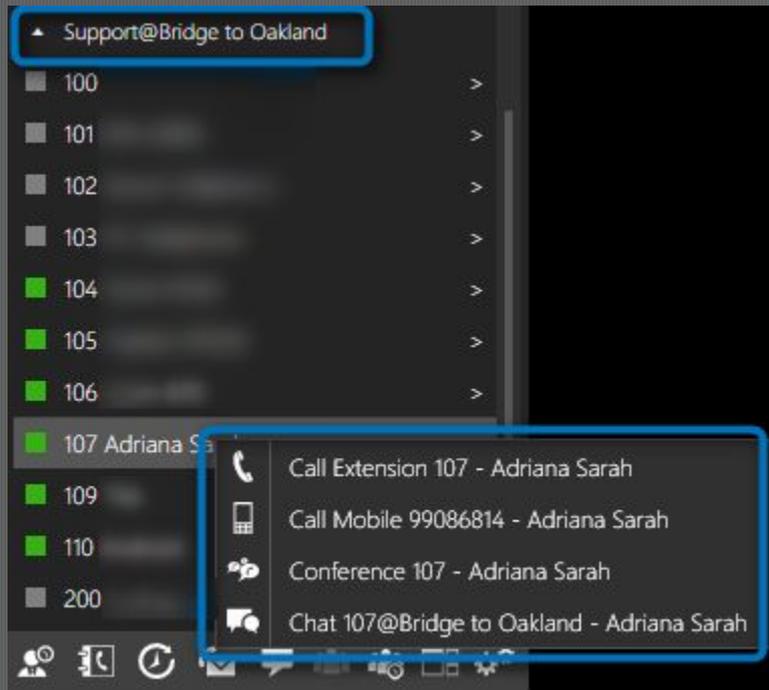
- Configure 6 connections
 - A=Master B=Slave
 - A=Master C=Slave
 - B=Master C=Slave
- Numbering Plan
 - PBX A – 1xxx
 - PBX B – 2xxx
 - PBX C – 3xxx



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

