Lync Express
The Evolution of UC
Frederic Dickey
Director of Professional Services
July 9, 2013
Live from WPC 2013!

2013 Microsoft Worldwide Partner Conference
Houston – July 7-11
Inside this Deck

- Unified Communications Defined
- Lync Server 2013 Demystified
- Lync Express Platform Introduction
- Lync Express Configuration Options
- Use Case Scenarios
- Configuration and Implementation Guides
- Closing
Unified Communications Defined

There are many definitions of Unified Communications but generally speaking it combines multiple real-time and offline communication modes (such as telephony, video, email, fax, and instant messaging) plus a range of additional capabilities (including presence detection and click-to-call) into a single, integrated solution. With UC solutions, users can access and manage all of their communications tools from a single environment, regardless of their location.
Lync 2013 Is Microsoft UC Solution

End-user software clients

Sample end-user hardware
MICROSOFT LYNC DEMYSTIFICATION
<table>
<thead>
<tr>
<th>Role</th>
<th>Icon / Symbol</th>
<th>Description</th>
</tr>
</thead>
</table>
| Lync 2013 Server      |               | The Lync Front End (FE) server is the main server that supports user registration, features and signalling between telephony devices such as SIP handsets, Lync Clients and Mobile Lync Clients. The FE Server can be compared to the call processor in an IP PBX. Front End server functions include:  
• Client registration and authentication, presence availability  
• IM services including IM conferences (chat rooms)  
• Audio / Video Conferencing, Web conferencing and app sharing |
| Lync 2013 Mediation Server |               | Mediation server is implemented in order to support voice connectivity and conferencing as well as managing VoIP Codecs. Typically PSTN Trunks will be terminated by the VoIP Gateway and this will in turn be connected to the mediation server. Similarly, SIP trunks will be terminated by an Session Border Controller (SBC) and this will in turn be connected to the mediation server. |
| Lync 2013 Edge Server |               | The role of the Edge Server is essential to provide connectivity between internal and external users or parties that may be outside of the corporate firewall. For example if one organisation wishes to federate services or IM to another external organisation, it is the role of the Edge Server to support this. |
# Lync 2013 Associated Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Icon / Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Directory</td>
<td></td>
<td>An Active Directory domain controller authenticates and authorizes all users and computers in a Windows domain type network—assigning and enforcing security policies for all computers and installing or updating software. For example, when a user logs into a computer that is part of a Windows domain, Active Directory checks the submitted password and determines whether the user is a system administrator or normal user. Lync uses Active Directory to authenticate Lync users on the network.</td>
</tr>
</tbody>
</table>
| Reverse Proxy      |               | HTTPS reverse proxy in the perimeter network is required for external clients to access the Lync Server 2013 Web Services. Some of the features that require external access through a reverse proxy include the following:  
• Enabling external users to download meeting content for your meetings.  
• Accessing the Lync Web App client.  
• Accessing the Dial-in Conferencing Settings webpage.  
• Enabling mobile applications to automatically discover and use the mobility (Mcx) URLs from the Internet. |
| Exchange UM        |               | Microsoft Exchange is for delivering emails to users. The Unified Messaging option provides Voice Mail access to Lync users. Voice Mails are delivered as attachments to emails. |
## Lync 2013 Associated Roles (cont.)

<table>
<thead>
<tr>
<th>Role</th>
<th>Icon / Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Web Apps Server</td>
<td><img src="image" alt="Office Web Apps Icon" /></td>
<td>Office Web Apps Server is a new Office server product that delivers browser-based versions of Word, PowerPoint, Excel, and OneNote. A single Office Web Apps Server farm can support users who access Office files through SharePoint 2013, Lync Server 2013, Exchange Server 2013, shared folders, and websites. This is used by Lync Server 2013 to deliver Web based conferencing to participants.</td>
</tr>
<tr>
<td>Survivable Branch Server</td>
<td><img src="image" alt="Survivable Branch Server Icon" /></td>
<td>The Survivable Branch Server is an appliance built to increase voice resiliency in branch-office scenarios. It needs to run Windows Server 2012, a Lync Server 2013 Registration Service, and a Mediation Server role. For telecom access, either a VoIP gateway or a Session Border Controller must be provided.</td>
</tr>
<tr>
<td>Office 365</td>
<td><img src="image" alt="Office 365 Icon" /></td>
<td>A Web-based version of Microsoft's Office suite of enterprise-grade applications. Office 365 is delivered to users through the cloud and includes Exchange Online for email, SharePoint Online for collaboration, Lync Online for unified communications, and a suite of Office Web Apps, Web-based versions of the traditional Microsoft Office suite of applications.</td>
</tr>
</tbody>
</table>
## Sangoma’s Telecom Roles and Interfaces

<table>
<thead>
<tr>
<th>Role</th>
<th>Icon / Symbol</th>
<th>Description</th>
</tr>
</thead>
</table>
| VoIP Gateway             |               | Provides conversion from legacy PSTN network to SIP. Interfaces can be analog (FXO, FXS), Digital (T1/E1) and ISDN BRI. Interfaces with the Lync 2013 Mediation Server role. Sangoma provides several Lync 2013 certified VoIP Gateway products for the Lync 2013 ecosystem:  
  - NetBorder Express: OEM software and telecom PCIe expansions boards  
  - Vega Series appliances:  
    - Vega 50: low density analog and BRI gateways  
    - Vega 100/200/400: 1, 2 or 4 T1/E1 digital interfaces  
    - Vega 5000: high density FXS (24 or 50 FXS lines) |
| Session Border Controller|               | Provides SIP signalling and voice mediation and security. Interfaces with the Lync 2013 Mediation Server role. Sangoma provides several Lync 2013 certified Session Border Controller products for the Lync ecosystem:  
  - Vega Series Enterprise SBC appliances: from 25 to 250 sessions  
  - NetBorder Carrier SBC appliances: from 400 to 4000 sessions |
Identifies Issues with Lync Server

• More and more enterprises considering Lync as PBX replacement (and gain UC features)
• Lots of moving parts, servers, roles and adjuncts
• Integration can be intimidating for the SMB’s
• Typical Microsoft channel has great expertise over Microsoft Products
  – But little in telecom (VoIP Gateways, eSBC, etc.)
LYNC EXPRESS INTRODUCED
Easier Way to Deploy Lync Server 2013

Office 365
Remote Users
Federated Users
SIP Trunks
PSTN

Firewall
DMZ
Firewall
Edge Server
Reverse Proxy
Enterprise SBC
VoIP GW
Mediation Server

Lync Users
Office Web Apps Server
Active Directory Server
Exchange UM Server
Survivable Branch Server

© Sangoma Technologies 7/9/2013
Introducing Lync Express Appliance

- Mediation Server
- Lync 2013 Server
- Edge Server
- Reverse Proxy
- Active Directory
- VoIP Gateway
- Vega eSBC
- Windows Server 2012
- Lync 2013 Certified

Runs on Hyper-V
Simplified Lync Server Deployment

If no Existing Active Directory Infrastructure use Active Directory on board
Re-use existing Active Directory Infrastructure

Leverage Existing Active Directory Infrastructure (Turn off Local Active Directory VM)
An Easier Way to Deploy Lync

The only all-in-one Lync™ server appliance with a built-in VoIP gateway and a built-in SBC
Configuration Options

• Several options available
  – PSTN Lync Express
  – SIP Trunking Lync Express
  – Combination PSTN and SIP Trunking

• Provides Maximum Deployment Flexibility
# Lync Express TDM Configurations

<table>
<thead>
<tr>
<th>Type</th>
<th>SKU</th>
<th>Description</th>
<th>Users</th>
<th>MSRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1U</td>
<td>LYNC-TDM-D0104-SA1</td>
<td>1 E1T1 + 4 FXS</td>
<td>100</td>
<td>$8,995</td>
</tr>
<tr>
<td></td>
<td>LYNC-TDM-D0204-SA1</td>
<td>2 E1T1 + 4 FXS</td>
<td>200</td>
<td>$9,995</td>
</tr>
<tr>
<td></td>
<td>LYNC-TDM-A0602-SA1</td>
<td>6 FXO + 2 FXS</td>
<td>25</td>
<td>$8,495</td>
</tr>
<tr>
<td></td>
<td>LYNC-TDM-A2202-SA1</td>
<td>22 FXO + 2 FXS</td>
<td>100</td>
<td>$9,595</td>
</tr>
<tr>
<td></td>
<td>LYNC-TDM-B0402-SA1</td>
<td>4 BRI + 2 FXS</td>
<td>25</td>
<td>$8,745</td>
</tr>
<tr>
<td></td>
<td>LYNC-TDM-D0404-SA1</td>
<td>4 E1T1 + 4 FXS</td>
<td>400</td>
<td>$10,995</td>
</tr>
<tr>
<td>2U</td>
<td>LYNC-TDM-D0404-DA2</td>
<td>8 E1T1 + 4 FXS</td>
<td>1000</td>
<td>$15,995</td>
</tr>
</tbody>
</table>
# Lync Express SBC Configurations

<table>
<thead>
<tr>
<th>Type</th>
<th>SKU</th>
<th>Description</th>
<th>Users</th>
<th>MSRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1U</td>
<td>LYNC-SBC-025-SA1</td>
<td>25 session/call SBC</td>
<td>100</td>
<td>$ 10,495</td>
</tr>
<tr>
<td></td>
<td>LYNC-SBC-050-SA1</td>
<td>50 session/call SBC</td>
<td>200</td>
<td>$ 11,495</td>
</tr>
<tr>
<td></td>
<td>LYNC-SBC-100-SA1</td>
<td>100 session/call SBC</td>
<td>400</td>
<td>$ 12,695</td>
</tr>
<tr>
<td></td>
<td>LYNC-SBC-100-DA2</td>
<td>100 session/call SBC</td>
<td>400</td>
<td>$ 13,995</td>
</tr>
<tr>
<td>2U</td>
<td>LYNC-SBC-250-DA2</td>
<td>250 session/call SBC</td>
<td>1000</td>
<td>$17,495</td>
</tr>
</tbody>
</table>
# Lync Express Combo TDM / SBC

<table>
<thead>
<tr>
<th>Type</th>
<th>SKU</th>
<th>Description</th>
<th>Users</th>
<th>MSRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1U</td>
<td>LYNC-MRG-D0100-025-SA1</td>
<td>25 session SBC + 1 E1T1</td>
<td>100</td>
<td>$11,495</td>
</tr>
<tr>
<td></td>
<td>LYNC-MRG-D0100-050-SA1</td>
<td>50 session SBC + 1 E1T1</td>
<td>200</td>
<td>$12,495</td>
</tr>
<tr>
<td>2U</td>
<td>LYNC-MRG-A0808-025-SA1</td>
<td>25 session SBC + 8 FXO + 8 FXS</td>
<td>100</td>
<td>$11,245</td>
</tr>
<tr>
<td></td>
<td>LYNC-MRG-A2202-025-SA1</td>
<td>25 session SBC + 22 FXO + 2 FXS</td>
<td>100</td>
<td>$11,995</td>
</tr>
<tr>
<td></td>
<td>LYNC-MRG-A2202-050-SA1</td>
<td>50 session SBC + 22 FXO + 2 FXS</td>
<td>200</td>
<td>$12,995</td>
</tr>
<tr>
<td>1U</td>
<td>LYNC-MRG-B0402-025-SA1</td>
<td>25 session SBC + 4 BRI + 2 FXS</td>
<td>100</td>
<td>$11,245</td>
</tr>
<tr>
<td></td>
<td>LYNC-MRG-B0402-050-SA1</td>
<td>50 session SBC + 4 BRI + 2 FXS</td>
<td>200</td>
<td>$12,245</td>
</tr>
<tr>
<td></td>
<td>LYNC-MRG-D0200-100-SA1</td>
<td>100 session SBC + 2 E1T1</td>
<td>400</td>
<td>$14,895</td>
</tr>
<tr>
<td></td>
<td>LYNC-MRG-D0200-100-DA2</td>
<td>100 session SBC + 2 E1T1</td>
<td>400</td>
<td>$15,995</td>
</tr>
<tr>
<td>2U</td>
<td>LYNC-MRG-D0200-250-DA2</td>
<td>250 session SBC + 2 E1T1</td>
<td>1,000</td>
<td>$18,695</td>
</tr>
</tbody>
</table>
Sample Use Cases for Lync Express

• Greenfield deployments
• Behind Existing PBX
• Migration Scenarios
  – From Legacy PBX
  – From IP-PBX
  – From high count of analog lines
• Lync Voice enablement of Office 365 (aka Hybrid)
• Branch Office deployments
Behind Existing PBX

- Keep PBX dial plan
- Use PBX multi-line appearance ringing for dual use (legacy PBX phone and Lync)
Legacy IP-PBX migration to Lync

**SBC:**
- Performs SIP Security functions
- UDP / TCP Translation
- SIP harmonization

- Media harmonization
- Intelligent Call Routing
  - Active Directory Routing
  - Unified Dial Plan

Note: Existing AD Infrastructure could be used instead of running on Lync Express
Legacy PBX migration to Lync

**SBC:**
- Performs SIP Security functions
- UDP / TCP Translation
- SIP harmonization

**PBX Mediation Server**
- Media harmonization
- Intelligent Call Routing
  - Active Directory Routing
  - Unified Dial Plan

**Note:** Existing AD Infrastructure could be used instead of running on Lync Express.

© Sangoma Technologies 7/9/2013
Lync Transition with Analog Lines

SBC:
• Performs SIP Security functions
• UDP / TCP translation
• SIP harmonization

- Media harmonization
- Intelligent Call Routing
  • Active Directory Routing
  • Unified Dial Plan
Office 365 / Premise Lync 2013 Hybrid Implementation

Note: Announced at WPC 2013, hosting of ADFS, removes the need for separate server

- **Office 365**
- **Premise Lync 2013**
- **Hybrid Implementation**

**Diagram:***
- **Active Directory**
- **ADFS***
- **DirSync**
- **Office 365**
- **O365 User**
- **Reverse Proxy**
- **Edge Server**
- **Mediation Server**
- **Lync Server**
- **Enterprise SBC**
- **VoIP Gateway**
- **Internet**
- **DMZ**

*Sangoma Technologies*
Branch Office Deployments

Configured as a Survivable Branch Server

Branch Office configured as a Central/Autonomous Site
Specific Benefits of Using Lync Express

• Reduce complexity
  – No need to source and “right-size” a server
  – All key components preloaded
  – TDM gateway and SBC pre-loaded

• Simplify configuration and management
  – GUI access for all components

• Deployment Flexibility
  – Applicable with Several Use Case Scenarios
CONFIGURATION AND SET-UP
Quick Start Guide

• Lync Express appliance comes with integration guide
• Step by step instructions for
  – Active Directory
  – Lync Front End Pool (Standard Edition)
  – Mediation Server
  – Sangoma VoIP Gateway Configuration
  – Sangoma eSBC Configuration
• Leave Unite Ready to make sample or test calls
• Find it here:
  – http://wiki.sangoma.com/Lync-Express-20
Summary / Closing

• MS Lync is gaining market share but may be difficult to deploy

• Lync Express makes it easier and more cost-effective to deploy Lync with Enterprise Voice:
  – Office 365
  – Branch office support
  – PBX replacement

• Lync Express is the only Lync server appliance with a built-in VoIP gateway and SBC
For More Info

• Guide to Lync Express
  http://wiki.sangoma.com/Lync-Express

• For future training, visit
  http://sangoma.com/resources/training
QUESTIONS
Contact Us

• Sangoma Technologies
  100 Renfrew Drive, Suite 100
  Markham, Ontario L3R 9R6
  Canada

• Website
  http://www.sangoma.com/

• Telephone
  +1 905 474 1990 x2 (for Sales)

• Email
  sales@sangoma.com
THANK YOU