

MVA

Microsoft  
Virtual  
Academy



Module 8

Phones and Devices

MVA Jump Start

# Module Overview

- Introduction to Phones and Devices
- Device Deployment
- Lync Server 2013 Phone Management
- Analog Device Support

# Lesson 1: Introduction to Phones and Devices

- What is a Device?
- IP Desk Phones, two types
- Lync Phone Edition – Goals
- Lync Phone Edition - Phones
- Hardware Specifications
- Language and Country Support
- Authentication Methods
- Information Worker Phone Modes
- Compatible IP Phones – Goals
- Compatible IP Phones - Phones

# What is a Device?

- A device refers to any unified communications (UC) device:
  - Headsets
  - Webcams
  - Hard Phones
- Phones running Microsoft Lync Phone Edition
  - Desktop or Information Worker(IW) phones
  - Conferencing phones
  - Common Area phones

## IP Desk Phones, two types

- Lync Phone Edition - Optimized for Lync
- Compatible IP Phones Tested and Qualified for Lync

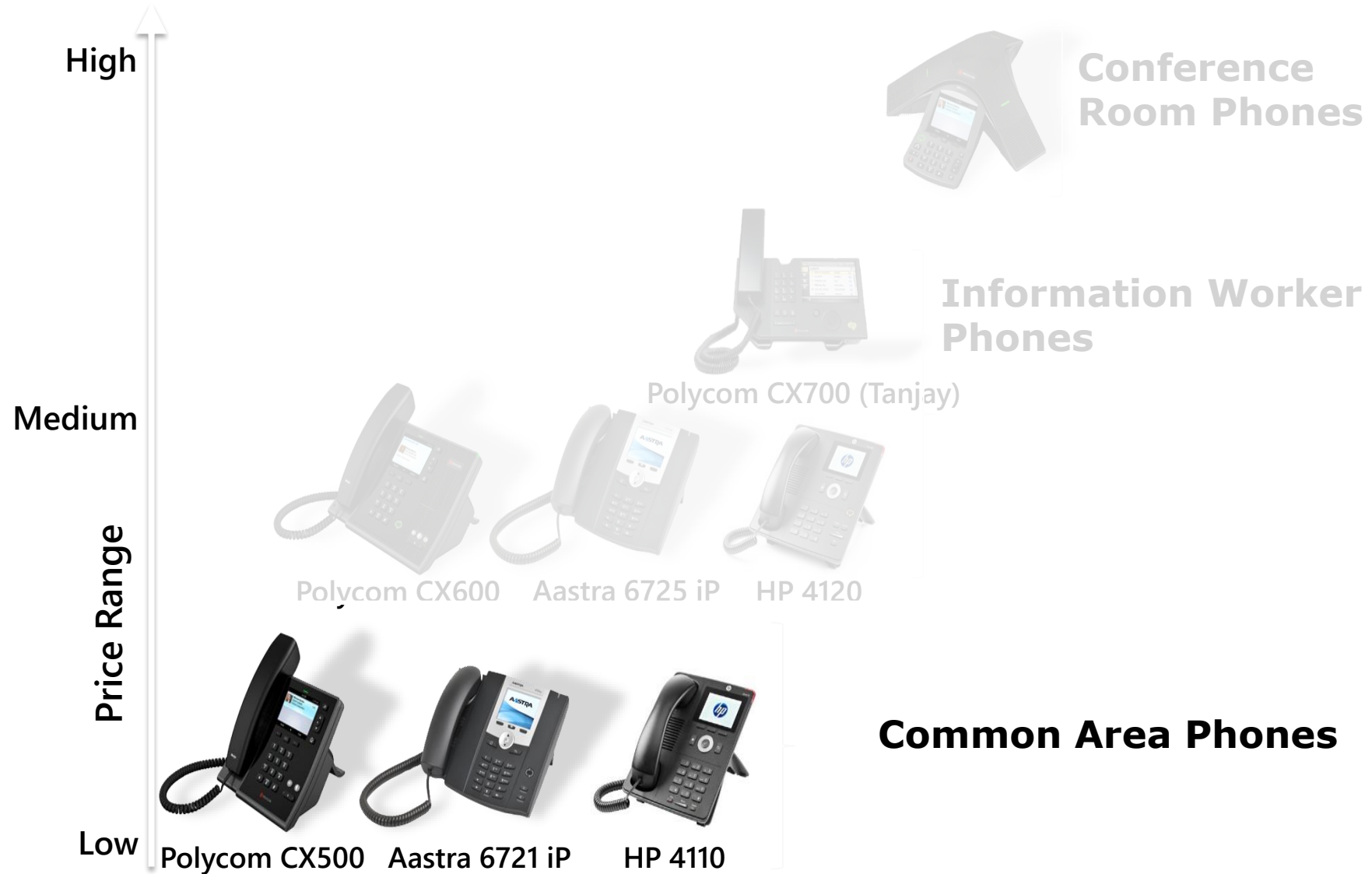
# Lync Phone Edition – Goals

- Targeted at Information Workers, Conference Rooms and Common Areas
- Running Lync Phone Edition
- Enabling partners to build a range of devices
- Supporting key Voice Request For Proposal (RFP) features
- Address Enterprise manageability requirements

# Lync Phone Edition - Phones



# Common Area Phones

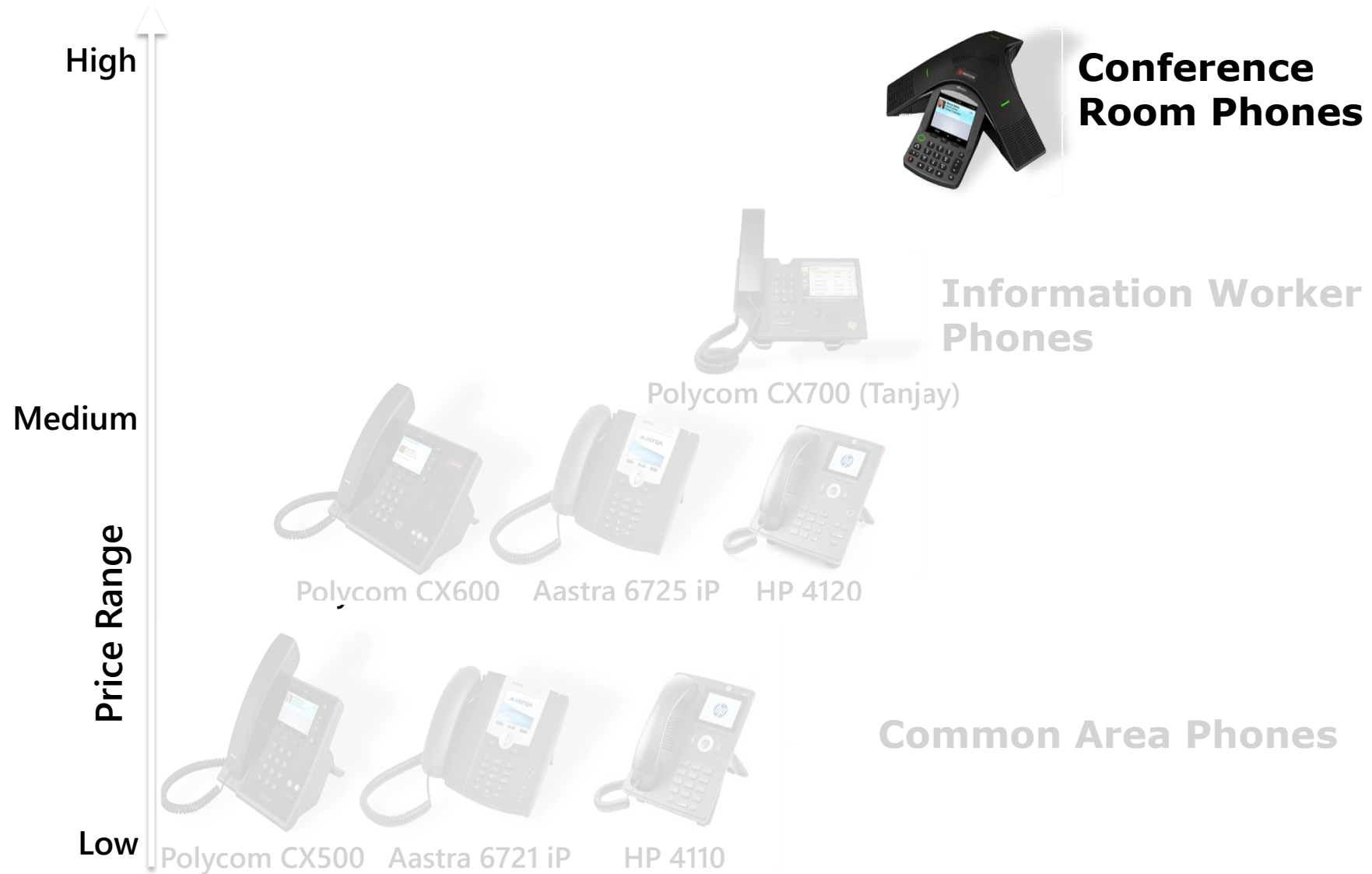




# Information Worker Phones



# Conference Room Phones



# Hardware Specifications

Type	Common Area	Information Worker	Conference
Audio modes	Handset	Handset, Hands Free, Headset	Hands Free
Audio processing	Wideband DSP	Wideband DSP	Wideband DSP
Network	1-port 10/100	2-port GigE	1-port 10/100
Power	PoE (class 2), AC	PoE (class 2), AC	PoE (class 2)
USB for "better together"	No	Yes	Yes
Wall Mount	Yes	Yes	N/A
Display	3.5" Color QVGA	3.5" Color QVGA	3.5" Color QVGA
Input	3x4 dial pad 3 menu keys Navigation buttons	3x4 dial pad 3 menu keys Navigation buttons	3x4 dial pad 3 menu keys Navigation buttons

# Language and Country Support

- Shipping in 16 languages:
  - English, German, Spanish, French, Italian, Japanese, Korean, Dutch, Portuguese (Brazil), Chinese Simplified (China), Chinese Traditional (Taiwan), Danish, Finnish, Norwegian, Russian and Swedish
- Certification in 51 countries:
  - EU + EFTA (32), USA, Australia, Argentina, Canada, Hong Kong, India, Israel, Japan, Malaysia, Mexico, New Zealand, Russia, South Africa, Singapore, Taiwan, UAE, Brazil, China, Korea

# Authentication Methods

- PIN
  - Combined with phone number/extension
- Domain user name and password
  - Only available when the device is tethered to a machine running Microsoft Lync
- Certificate
  - After successful PIN, or domain user name and password authentication, a user certificate will be published to the device's user store to be used for subsequent logons (TLS-DSK) and communications

# Information Worker Phone Modes

## Enhanced mode

Using username/password Authentication via Lync while Tethered

Individual  
Voice Mails

Call logs via  
Exchange

Outlook  
Contacts

Calendar

1-click Conf.  
Join

Better Together  
with Lync

## Basic mode

Using PIN authentication directly on phone

Contacts

Photos

Message  
Waiting  
Indicator

Voice  
RFP  
Features

Remote  
usage

Conf.  
leader  
control

## Compatible IP Phones – Goals

- Do not require a gateway (unlike PBX phone), connect directly to Lync infrastructure
- Provide core call functionality, presence awareness
- Depending on vendor also provide server management, provisioning and updating.
- Run a manufacturer OS – Not the Lync Phone Edition

# Compatible IP Phones - Phones





## Lesson 2: Device Deployment

- Deployment Checklist
- Lync Server 2013 Components for Devices
- Deploying IP Phones
- DNS Requirements
- DHCP Requirements
- Sign-in process for Lync Phones - Internal
- Deploying Common Area Phone
- Common Area Phone – Hotdesking

# Deployment Checklist

1. Select the appropriate device for a given usage scenario
2. Ensure Lync Server 2013 prerequisites are met
3. Make the required configurations
4. Provision and prepare users
5. Set up devices
6. Support and monitor the deployment

# Lync Server 2013 Components for Devices

- Web Services
  - Lync Certificate Services
  - Web Address Book Service
  - Device Update Service
- Enterprise Voice
- Contact objects (common area phones only)
  - Created in Active Directory and enabled for Lync Enterprise Voice
- Dial plans, voice polices, and outbound call routes
  - To manage the behaviour of phone devices
- PIN Authentication and Policy

# Deploying IP Phones

- System and Infrastructure requirements
- Configure the authentication method
- Confirm that the required components for all UC phones are in place
- Configure external access
- Optional Switch Features to Support IP Phones:
  - Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED)
  - Power over Ethernet (PoE)

# DNS Requirements

Type	Value
A	ucupdates-r2.<domain suffix (DHCP option 15)/SIP domain>
SRV	_sipinternal._tcp.<SIP domain> _sipinternaltls._tcp.<SIP domain> _sip._tls.<SIP domain> _ntp._udp.<SIP domain> is replaced by DHCP option 42
A	Fully qualified domain names (FQDNs) for the pool(s) hosting the Registrars
A	LSWebPoolFQDN

# DHCP Requirements

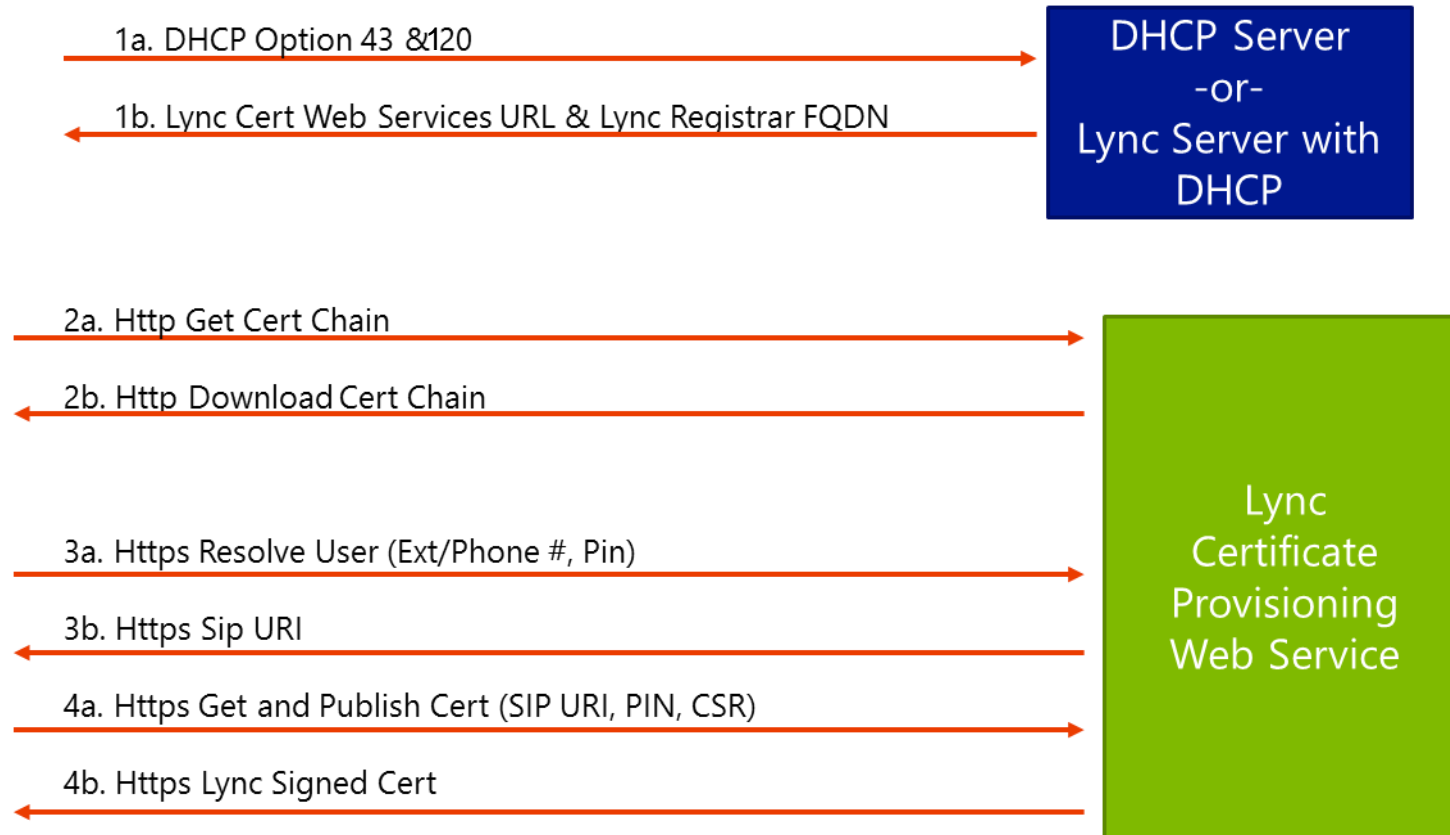
- A DHCP server must provide Web Services URL and Enhanced Registrar FQDN to devices.
  - Option 42: NTP Server
  - Option 43: Certificate Service Provisioning URL
  - Option 120: SIP Server
- DHCP Options:
  - Use existing Enterprise DHCP servers
  - Lync registrar (built-in DHCP responds only to Lync Phones settings)

# DHCP Requirements

Option	Value	Note
42	NTP Server IP address	Resolve time server in an Intranet environment
43	LS Pool Certificate Provisioning Service URL (with vendor class MS-UC-Client)	Specify the internal URL in the form <code>https://LSWebPoolFQDN:443/CertProv/CertProvisioningService.svc</code> using different sub options
120	FQDN of the LS Pool Registrar	Specify the FQDN of the pool that will be the first logon server for the device. Typically this is a Director pool or the Front End pool FQDN. The pool FQDN suffix must match the user's SIP URI

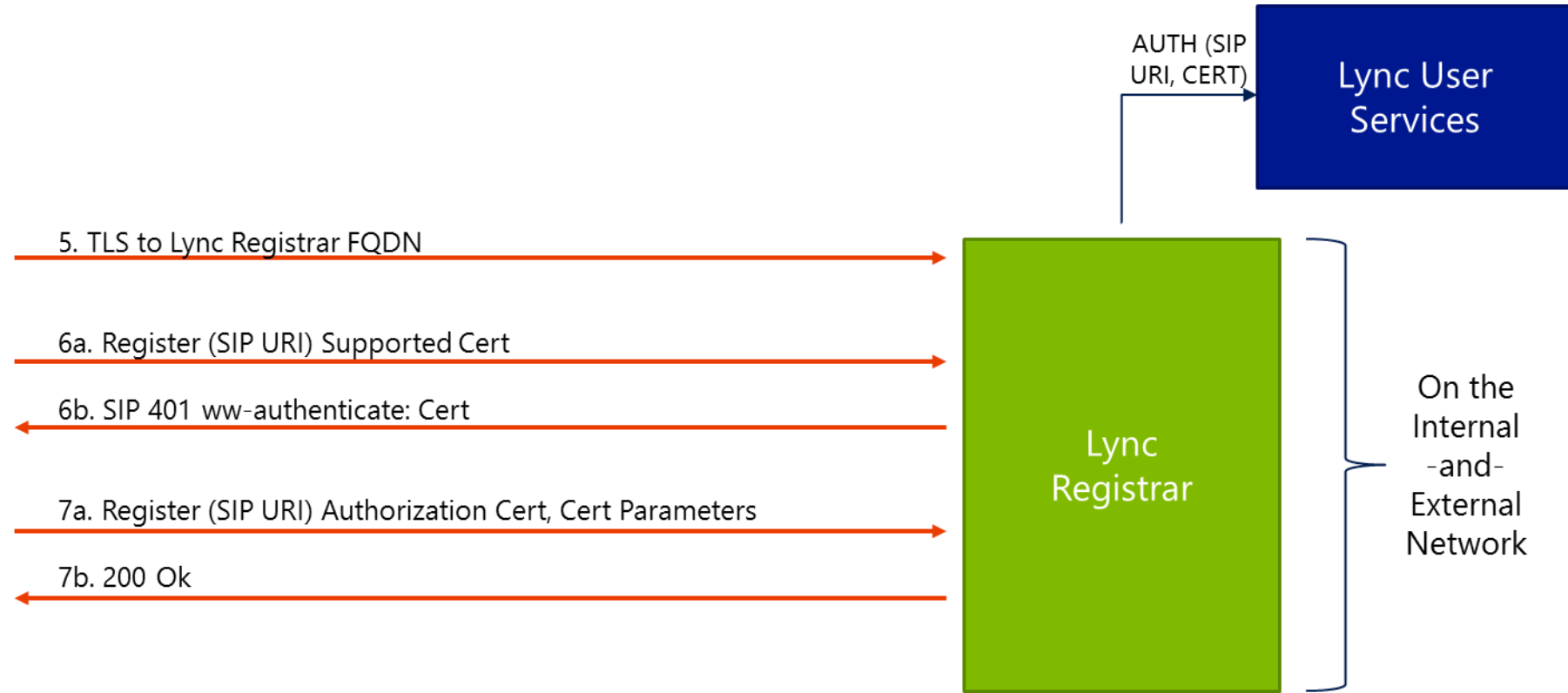
[http://technet.microsoft.com/en-us/library/gg398088\(v=ocs.14\).aspx](http://technet.microsoft.com/en-us/library/gg398088(v=ocs.14).aspx)

# Sign-in process for Lync Phones - Internal

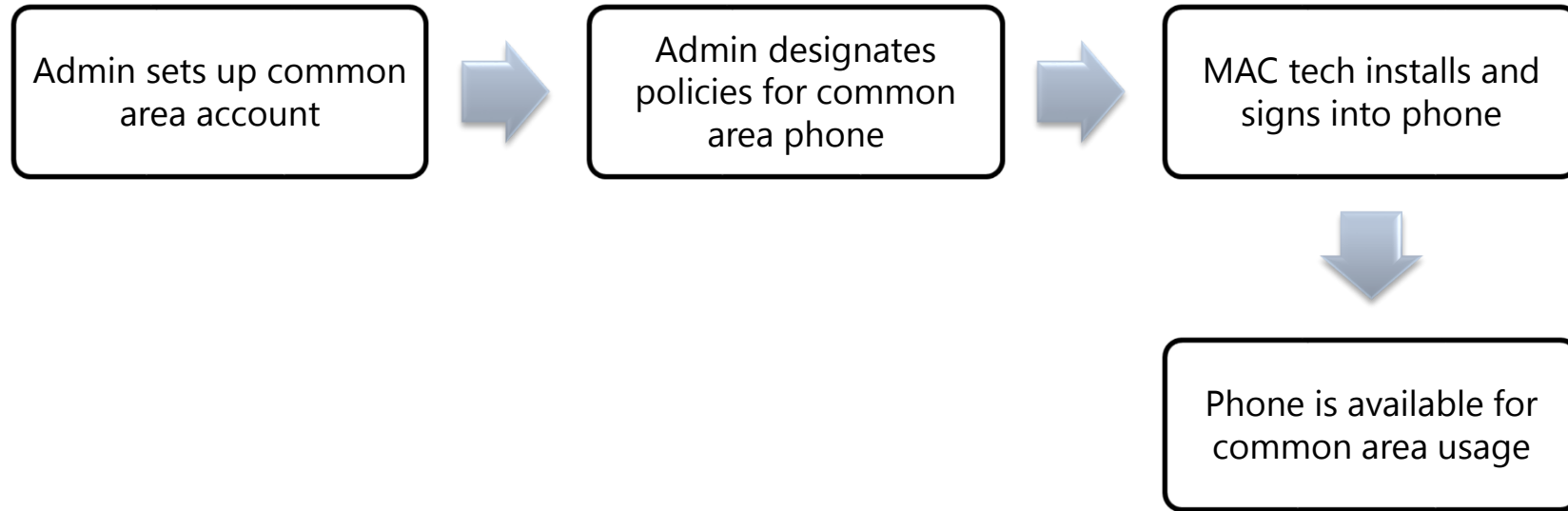




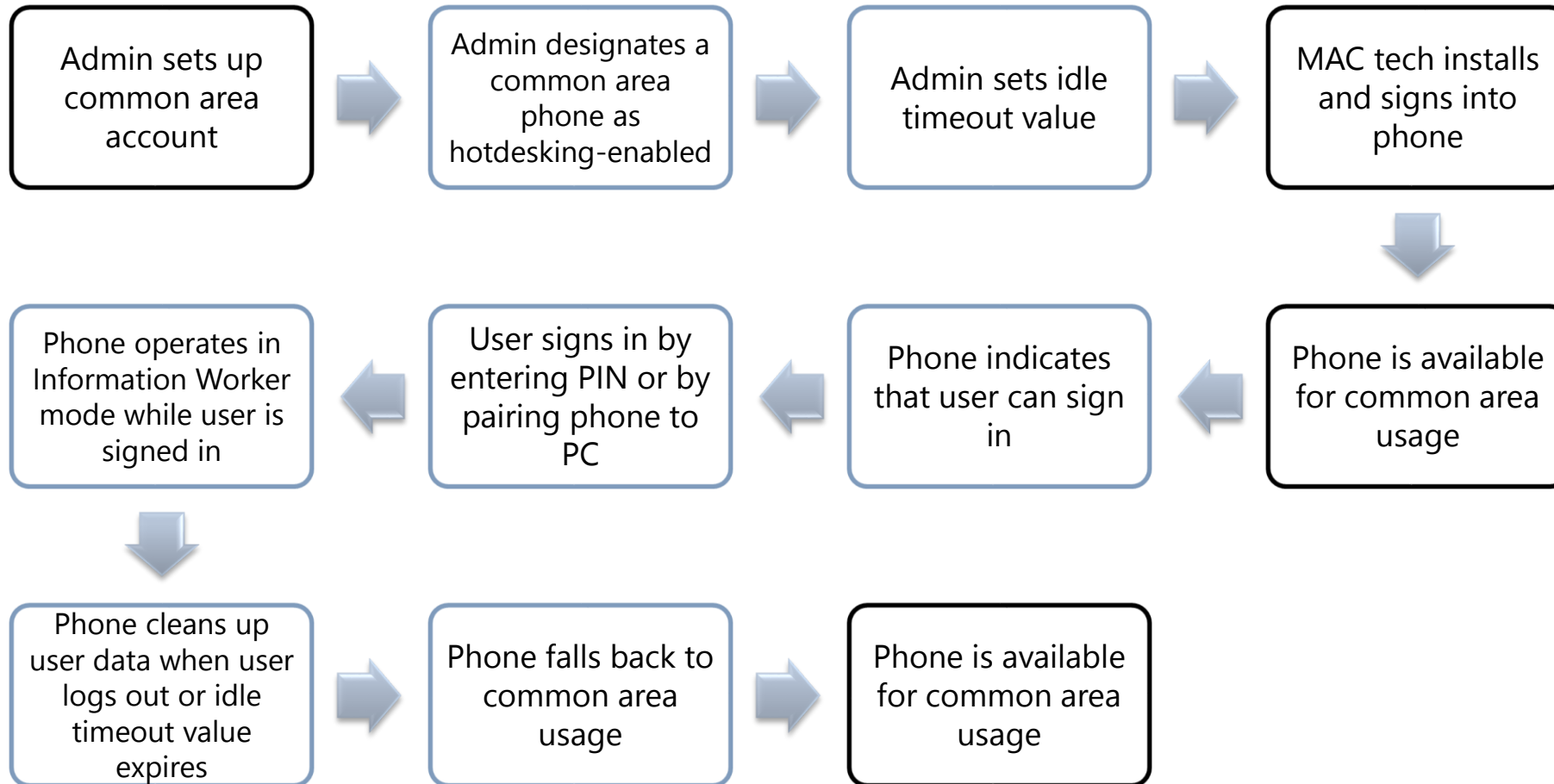
# Sign-in process for Lync Phones - Internal



# Deploying Common Area Phone



# Common Area Phone – Hotdesking



## Lesson 3: Lync Server 2013 Phone Management

- Common Area Policy Settings
- Common Area Phone Contact Objects
- Creating Required Policies
- Assigning the policies to the Phone
- Updating Phone Devices

# Common Area Policy Settings

Option	Value	Note
UserSetting	CommonAreaPhone	<ul style="list-style-type: none"><li>• Specifies if device is a common area phone</li><li>• Create the contact in Powershell<ul style="list-style-type: none"><li>• New-CSCCommonAreaPhone</li></ul></li></ul>
ClientPolicy	EnableHotdesking HotdeskingTimeout	<ul style="list-style-type: none"><li>• Enables user to log on to common area device</li><li>• Specifies timeout value</li><li>• Requires PowerShell, not all options available in UI<ul style="list-style-type: none"><li>• New-CSClientPolicy</li></ul></li></ul>
VoicePolicy	EnableCallTransfer EnableCallPark AllowCallForwarding	<ul style="list-style-type: none"><li>• Enables UI for call transfer</li><li>• Enables UI for Call Park</li><li>• Enables UI for call forwarding</li><li>• Can be done through UI or Powershell<ul style="list-style-type: none"><li>• New-CsVoicePolicy</li></ul></li></ul>
MeetingPolicy	AllowIPAudio	<ul style="list-style-type: none"><li>• Enables UI for conference escalation</li><li>• Can be done through UI or Powershell<ul style="list-style-type: none"><li>• New-CsConferencingPolicy</li></ul></li></ul>
ExternalAccess Policy	EnableOutsideAccess	<ul style="list-style-type: none"><li>• Enables external access</li></ul>

# Common Area Phone Contact Objects

- Each Common Area Phone needs a contact object
  - Contact object is used to manage and assign policies
  - Contact object is created in PowerShell

```
New-CsCommonAreaPhone -DisplayName "Lobby phone Building 1"  
-DisplayNumber "+31-20-500 1500" -LineUri "tel:+31205001500;ext=1500"  
-RegistrarPool se01.tailspin.local -OU "OU=Phones,DC=Tailspin,DC=local"
```

- Contact object is stored in Active Directory

```
Identity : CN=Lobby phone Building 1,OU=Phones,DC=tailspin,DC=local  
RegistrarPool : se01.tailspin.local  
Enabled : True  
SipAddress : sip:ac13268e-9042-4554-8cdd-38abc839ce6@tailspin.com  
ClientPolicy :  
PinPolicy :  
VoicePolicy :  
VoiceRoutingPolicy :  
MobilityPolicy :  
PersistentChatPolicy :  
ConferencingPolicy :  
LineURI : tel:+31205001500;ext=1500  
DisplayNumber : +31-20-500 1500  
DisplayName : Lobby phone Building 1  
Description :  
ExUmEnabled : False
```

The screenshot shows the Active Directory Users and Computers console. The left pane displays the hierarchy: Active Directory Users and Computers > Saved Queries > tailspin.local > Phones. The right pane shows the details for the 'Lobby phone Building 1' contact object.

Name	Type
Lobby phone Building 1	Contact

Attribute	Value
instanceType	0x4 = (WRITE)
msRTCSIP-Applicatio...	18
msRTCSIP-Deployme...	SRV:
msRTCSIP-Federatio...	TRUE
msRTCSIP-InternetA...	TRUE
msRTCSIP-Line	tel:+31205001500;ext=1500
msRTCSIP-OptionFlags	385
msRTCSIP-OwnerUm	um:device:commonareaphone
msRTCSIP-PrimaryHo...	CN=Lc_Services,CN=Microsoft,CN=1:1,CN=f...
msRTCSIP-PrimaryUs...	sip:ac13268e-9042-4554-8cdd-38abc839ce6@tailspin.com
msRTCSIP-UserEnab...	TRUE
msRTCSIP-UserPolic...	0=592321866
msRTCSIP-UserRouti...	\68'D8\F4\19\A1\D0\D8\53\BE\89\1B\F...
name	Lobby phone Building 1

# Creating Required Policies

- Client Policy

```
New-CsClientPolicy -Identity "CAPclientpolicy"  
-ShowRecentContacts $false -DisableFreeBusyInfo $true  
-AddressBookAvailability WebSearchOnly
```

```
New-CsClientPolicy -Identity "HotDesking Phones Policy"  
-ShowRecentContacts $false -DisableFreeBusyInfo $true  
-AddressBookAvailability WebSearchOnly  
-EnableHotdesking $true -HotDeskingTimeout 00:30:00
```

- Voice Policy

```
New-CsVoicePolicy -Identity CAPvoicepolicy -PstnUsages  
@{add="Internal","Local"} -AllowSimulRing $False -AllowCallForwarding  
$False -Name CAPvoicepolicy -EnableDelegation $False -EnableTeamCall  
$FALSE -EnableCallTransfer $False
```

- Conferencing Policy

```
New-CsConferencingPolicy -Identity CAPconferencingpolicy -AllowIPAudio  
$false -AllowIPVideo $False -EnableFileTransfer $False -  
EnableP2PFileTransfer $False -EnableDataCollaboration $False
```

# Assigning the policies to the Phone

- Policies are "Granted" to phone objects

```
Grant-CSClientPolicy -identity "Main Lobby Phone" -PolicyName "CAPclientPolicy"
```

```
Grant-CSClientPolicy -identity "Main Lobby Phone" -PolicyName "CAPvoicepolicy"
```

```
Grant-CSClientPolicy -identity "Main Lobby Phone" -PolicyName "CAPconferencingpolicy"
```

- Additionally assign a PIN to the Common Area Phone

```
Set-CSClientPIN -identity "Main Lobby Phone" -PIN 201310
```



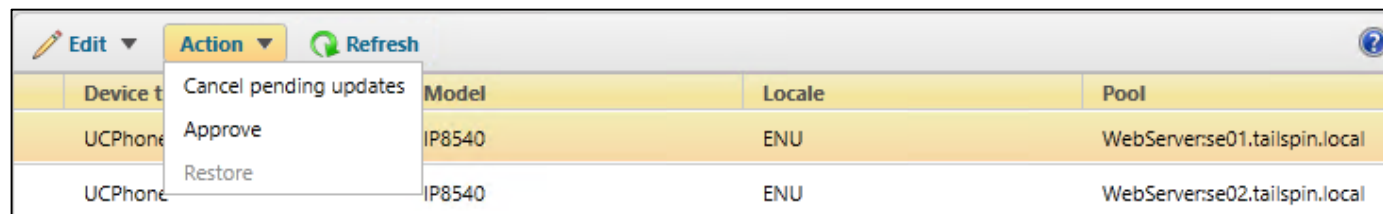
# Updating Phone Devices

- Download and Install

```
Import-CsDeviceUpdate -Identity "service:WebServer:atl-cs-001.litwareinc.com"  
-FileName C:\Updates\UCUpdates.cab  
  
-or-  
  
Get-CsService -WebServer | ForEach-Object {Import-CsDeviceUpdate  
-Identity $_.Identity -FileName C:\Updates\UCUpdates.cab}
```

- Test

- Deploy



The screenshot shows a management console interface with a table of phone devices. The table has columns for Device ID, Model, Locale, and Pool. An 'Action' menu is open over the first row, showing options: 'Cancel pending updates', 'Approve', and 'Restore'.

Device ID	Model	Locale	Pool
UCPhone	IP8540	ENU	WebServer01.tailspin.local
UCPhone	IP8540	ENU	WebServer02.tailspin.local

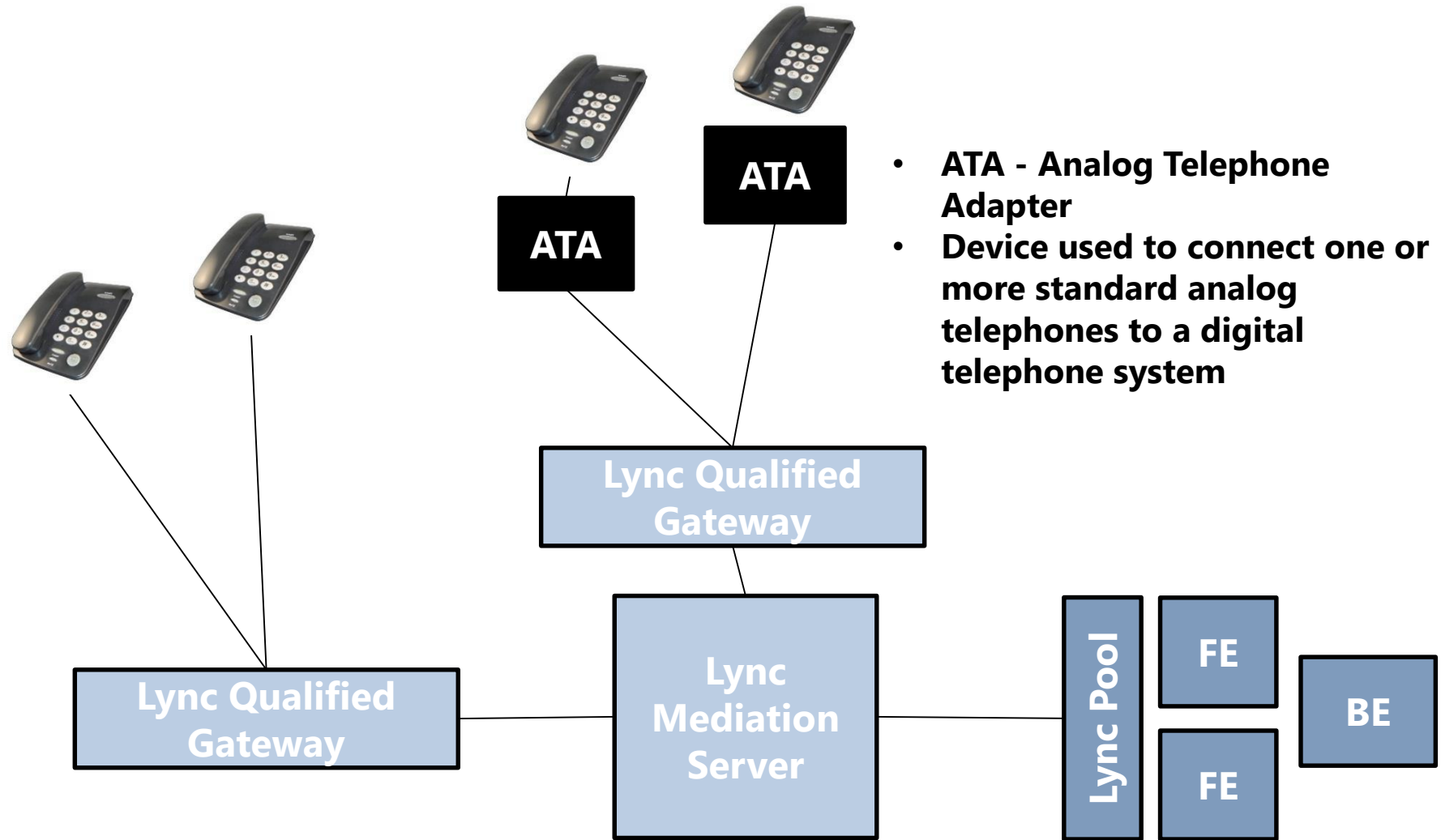
# Lesson 4: Analog Device Support

- Analog Device Support
- Analog Devices Topology
- Assigning Policies to Analog Device

# Analog Device Support

- Microsoft Lync Server 2013 supports Analog Devices such as:
  - Fax Machines
  - Analog Phones
  - Modem or teletype/telecommunication device for people with hearing aid (TTY/TDD)
- Analog device support is implemented to support companies that have heavily invested in analog devices and do not see functional need to replace them
- It enables streamlining and managing analog devices from Lync

# Analog Devices Topology



# Assigning Policies to Analog Device

- A user cannot sign in on an analog device, so the device cannot be associated to a user.
- To manage analog devices:
  - Create a new contact object in Active Directory Domain Services (AD DS) for an analog device
  - Create and assign voice policies to analog device AD contact object.
- Not supported:
  - Park calls
  - Transfer calls
  - Set call forwarding options

[http://technet.microsoft.com/en-us/library/gg398314\(v=ocs.14\).aspx](http://technet.microsoft.com/en-us/library/gg398314(v=ocs.14).aspx)



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