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Completing Sandia's Unified Communications Vision

Securely Create, Store, Share, Analyze and Find Information while Integrated, Connected and Federated

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Agenda

- High level architectural designs of Sandia's Skype for Business
- Unified Communications with External business Partners
- Skype Room Systems and adoption rate at Sandia
- Mobile capabilities with iOS
- Scheduling and Room Calendars
- Interoperability discussions with Telecommunications and Standards based Video Conferencing Systems
- Scale, utilization and illustrations of business value of Unified Communications in the enterprise
- Brief overview of Classified Capabilities
- Questions

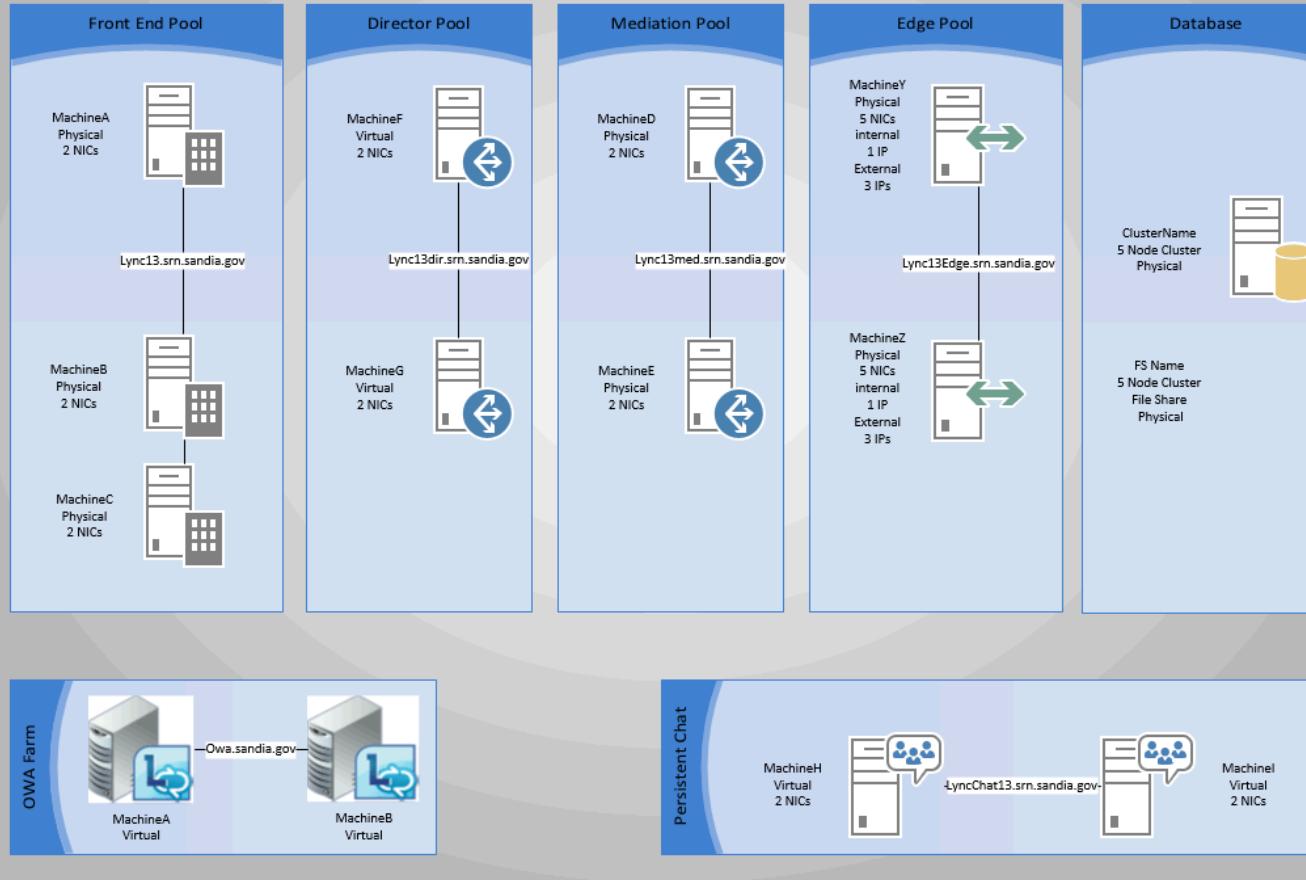
- **Extra Slides** – History of Real Time Collaboration at Sandia

Background and Overview

- Enterprise Collaboration Services
 - Managed by Scott Rogers, Lead by Scott Stephens
 - 14 ECS team members - *Design, implement and maintain agile, secure, scalable and Highly Available Enterprise Class Information Systems*
 - 4 Primary Service Categories
 - Unified Messaging and Directory Management (Email, AD Contacts and Groups)
 - SharePoint Products and Technologies (Multiple SharePoint Farms on 4 networks)
 - Real-time Collaboration (Skype for Business)
 - Mobility Backed Systems (Blackberry, Active-Sync, Good & Airwatch)
- Anthony Roscio
 - Lync Architect for Enterprise Collaboration Services
 - SharePoint Deputy Architect

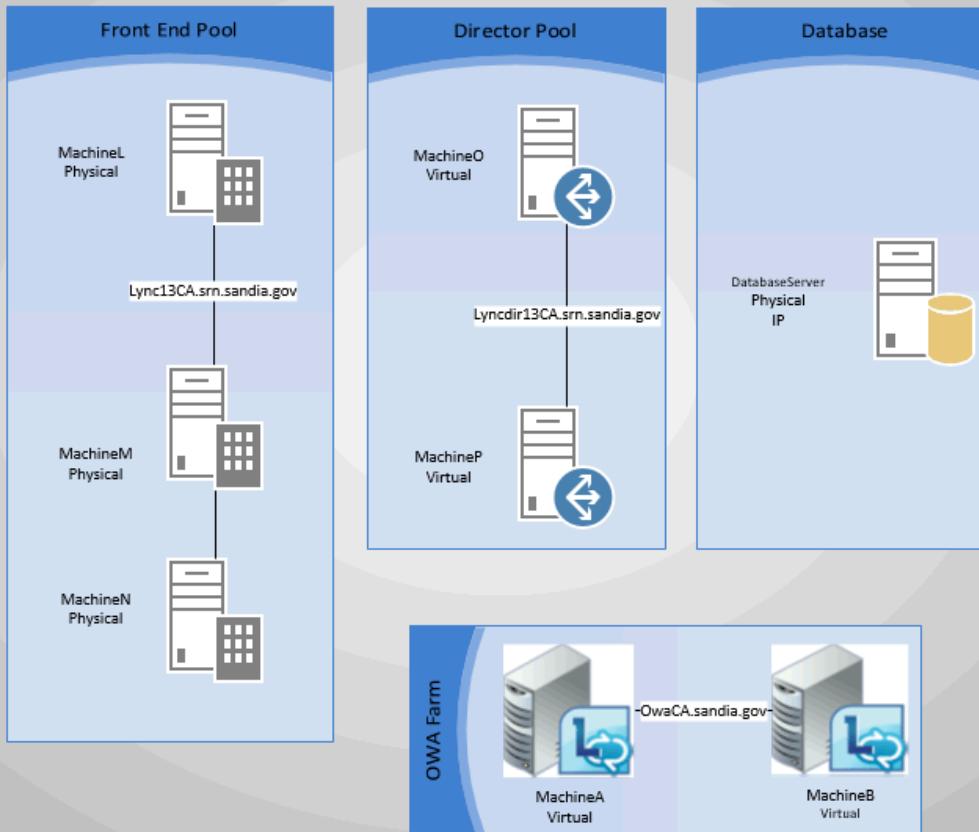
High level architectural designs of Sandia's Skype for Business

S4B 2015 SRN NM



High level architectural designs of Sandia's Skype for Business

LYNC 2013 SRN CA



Front End pools are resilient

- Automatic fail over if one pool goes completely down
- Pools do not fail over if network outage is noticed
- Central Management store is kept in NM
- Both pools keep backups of each other for fault tolerance

All pools have a hardware load balancer sitting in front of them

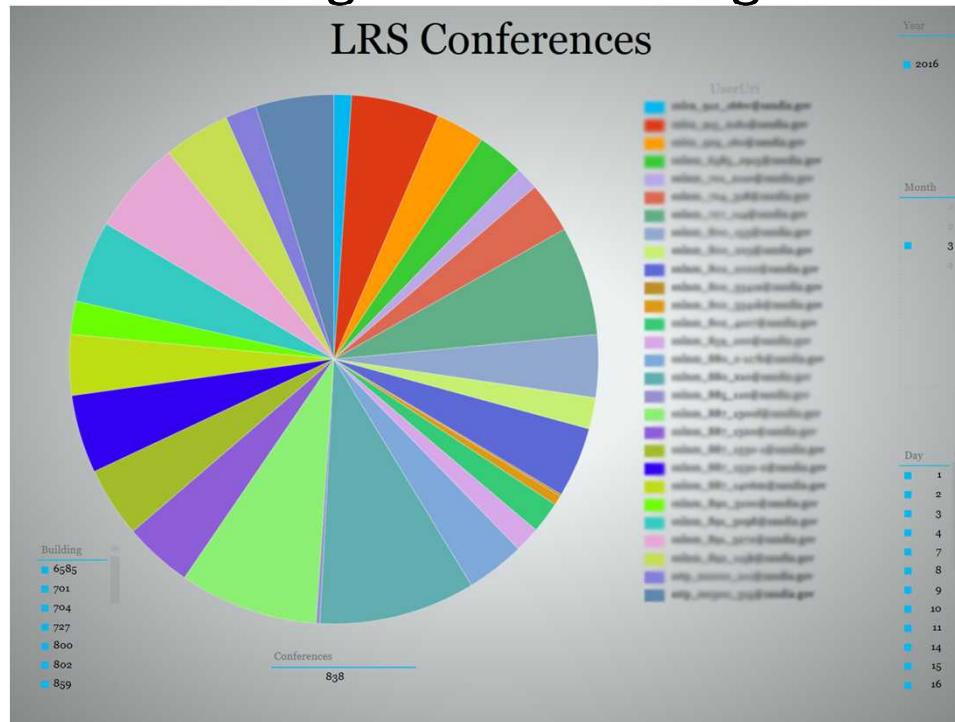
Unified Communications with External business Partners

- Skype for Business Federation
 - Configuration
 - Domains are allowed by a Sandia MOW requesting access through a service request
 - Internal servers communicate with edge servers through firewall exceptions to either the internal hardware load balancer or to internal NIC of edge server
 - External Business Partner communicates to edge servers through external hardware load balancer
 - We allow Skype for Business to control access through access list on servers
 - Restrictions
 - No file transfers
 - External participants cannot control desktop

Skype Room Systems and adoption rate at Sandia

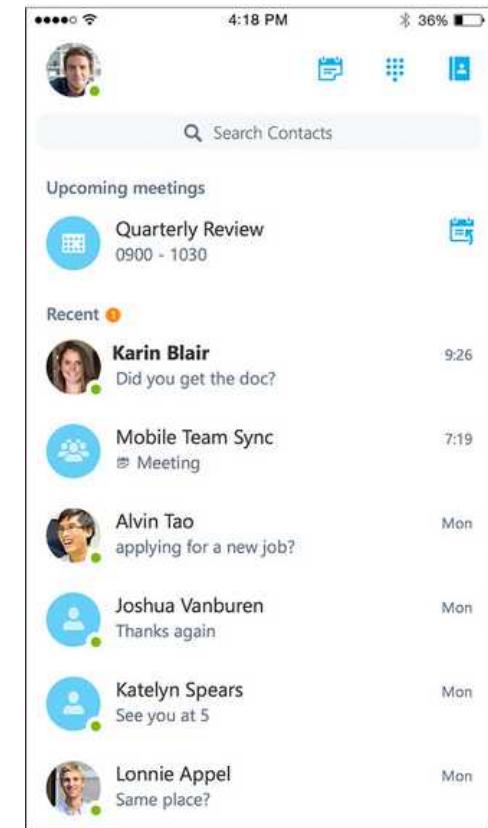


- First room system installed in November of 2013 for testing
- We now have 32 systems installed in 18 buildings across NM and CA
- Rooms perform on average 800+ meetings a month



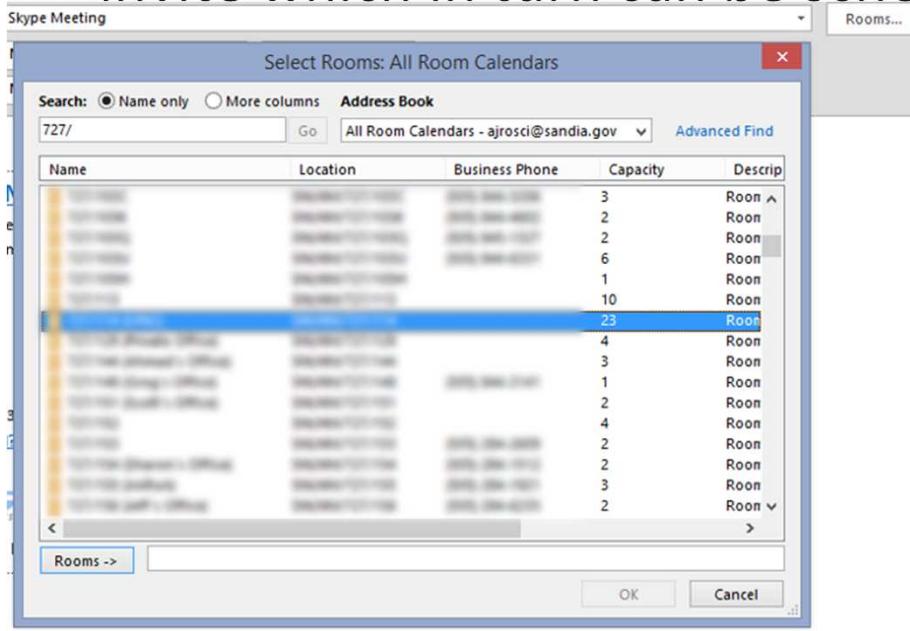
Mobile capabilities with iOS

- Sandia currently allows MOWs to subscribe to use Skype for Business on a Sandia owned iOS device.
- Supported modalities
 - Audio/video
 - Desktop sharing
 - PowerPoint sharing
- iOS client supports conversation history
 - Allows you to pick up a conversation from your Desktop
- When on Sandia WiFi you can see upcoming meetings
- Growth: 135 pilot to 959 current **610%**



Scheduling and Room Calendars

- Rooms are enrolled in room calendars by service request
 - SharePoint site with InfoPath form is submitted by room owner
 - ECS verifies data submitted and submits request into Exchange
- Once in Exchange the room appears in the Outlooks meeting invite which in turn can be scheduled as a Skype Meeting



Join Skype Meeting

This is an online meeting for Skype for Business, the professional meetings and communications app formerly known as Lync.

Join by phone

[1-505-844-5300](tel:1-505-844-5300) (NM)

English (United States)

[1-877-720-1159](tel:1-877-720-1159) (NM)

English (United States)

[Find a local number](#)

Conference ID: 990673

[Forgot your dial-in PIN?](#) | [Help](#)



Service provided by Enterprise Collaboration Services, Org: 09329



Interoperability discussions with



Telecommunications and Standards based Video Conferencing Systems

- S4B Teleconferencing officially deployed in January 2016
 - Meetings scheduled through Outlook invite w/integrated conference ID
 - Meeting metrics are now kept
- Our video conferencing colleagues have implemented VTC equipment to utilize Skype for Business integration
 - VTC rooms schedule using Outlook Skype for Business meeting invites
 - VTC rooms dial conference ID from Outlook invite to join meeting
 - This allows all desktop clients, Skype for Business rooms systems and VTC room systems to utilize one ID to join a meeting
 - Same invite can be sent out of Sandia to anyone in the world to allow access to meeting

Scale, utilization and illustrations of business value of Unified Communications in the enterprise

Weekly	Total peer-to-peer sessions	Total peer-to-peer IM sessions	Total peer-to-peer IM messages	Total peer-to-peer audio sessions	Total peer-to-peer audio session minutes	Avg. peer-to-peer audio session minutes	Total peer-to-peer video sessions	Total peer-to-peer video session minutes	Avg. peer-to-peer video session minutes	Total peer-to-peer file transfer sessions	Total peer-to-peer application sharing sessions
10/26/2014	0	0	0	0	0	0	0	0	0	0	0
11/2/2014	0	0	0	0	0	0	0	0	0	0	0
11/9/2014	0	0	0	0	0	0	0	0	0	0	0
11/16/2014	0	0	0	0	0	0	0	0	0	0	0
11/23/2014	5302	5260	13364	4	46	11.5	1	31	31	24	14
11/30/2014	93937	91498	694213	398	3755	9.43	152	2457	16.16	953	1096
Total	99239	96758	707577	402	3801		153	2488		977	1110

Peer to Peer Growth

Audio: 1025%

Video: 33%

A/S: 32%

Weekly	Total peer-to-peer sessions	Total peer-to-peer IM sessions	Total peer-to-peer IM messages	Total peer-to-peer audio sessions	Total peer-to-peer audio session minutes	Avg. peer-to-peer audio session minutes	Total peer-to-peer video sessions	Total peer-to-peer video session minutes	Avg. peer-to-peer video session minutes	Total peer-to-peer file transfer sessions	Total peer-to-peer application sharing sessions
3/27/2016	102333	94042	649331	4361	8961	2.05	185	2621	14.17	1585	1407
4/3/2016	107727	98650	671591	4780	10592	2.22	201	2665	13.26	1646	1445
4/10/2016	101374	91747	685782	4892	10627	2.17	204	3343	16.39	1758	1453
4/17/2016	97792	88563	651422	4519	9367	2.07	132	2390	18.11	1638	1399
4/24/2016	39317	35583	256903	2014	3779	1.88	72	1130	15.69	596	491
Total	448543	408585	2915029	20566	43326		794	12149		7223	6195

Scale, utilization and illustrations of business value of Unified Communications in the enterprise

Weekly	Total conferences	Total participants	Avg. participants per conference	Total A/V conferences	Total A/V conference minutes	Total A/V conference participant minutes	Avg. A/V conference minutes	Total unique conference organizers	Total conference messages
10/26/2014	0	0	0	0	0	0	0	0	0
11/2/2014	0	0	0	0	0	0	0	0	0
11/9/2014	0	0	0	0	0	0	0	0	0
11/16/2014	0	0	0	0	0	0	0	0	0
11/23/2014	5	7	1.4	0	0	0	0	5	8
11/30/2014	839	2466	2.94	238	15189	25779	63.82	457	7750
Total	844	2473		238	15189	25779			7758

Conferencing Growth

Total: 162%

A/V: 446%

Minutes: 400%

Weekly	Total conferences	Total participants	Avg. participants per conference	Total A/V conferences	Total A/V conference minutes	Total A/V conference participant minutes	Avg. A/V conference minutes	Total unique conference organizers	Total conference messages
3/27/2016	2159	6725	3.11	1227	64137	171867	52.27	1199	10046
4/3/2016	2318	7248	3.13	1378	76004	196590	55.16	1253	10855
4/10/2016	2281	7038	3.09	1387	78588	206290	56.66	1252	8556
4/17/2016	2301	7012	3.05	1410	76011	196390	53.91	1277	8654
4/24/2016	907	3117	3.44	549	27207	80926	49.56	658	3548
Total	9966	31140		5951	321947	852063			41659

Scale, utilization and illustrations of business value of Unified Communications in the enterprise

Weekly	Total PSTN conferences	Total participants	Total A/V conference minutes	Total A/V conference participant minutes	Total PSTN participants	Total PSTN participant minutes	Unique conference organizers
9/27/2015	139	725	9116	25530	282	9272	92
10/4/2015	137	675	8970	24232	280	10024	92
10/11/2015	226	1061	18404	38149	485	15354	156
10/18/2015	255	1156	15239	41246	566	17134	173
10/25/2015	236	1221	14688	46349	623	22674	158
Total	993	4838	66417	175506	2236	74458	

Tele-
Conferencing
Growth

Total: 280%

Weekly	Total PSTN conferences	Total participants	Total A/V conference minutes	Total A/V conference participant minutes	Total PSTN participants	Total PSTN participant minutes	Unique conference organizers
3/27/2016	840	3688	46860	140391	2628	102876	573
4/3/2016	977	4227	56529	165371	2848	115161	614
4/10/2016	957	4198	57985	169531	2867	113276	618
4/17/2016	945	4040	52911	156018	2785	108778	625
4/24/2016	389	1908	19964	68159	1278	46913	313
Total	4108	18061	234249	699470	12406	487004	

Brief overview of Classified Capabilities

- Two classified Skype for Business Implementations
 - SCN
 - Front end architecture similar to unclassified implementation
 - Hardware load balancer deployed in this environment
 - No directors, mediation servers, persistent chat servers or edge servers
 - Plans to implement edge servers and federation
 - SPN
 - Front end architecture similar to unclassified implementation
 - No hardware load balancer deployed in this environment, using DNS load balancing
 - No directors, mediation servers, persistent chat servers or edge servers
 - No current plans to implement edge servers and federation

QUESTIONS?

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The History Sandia's Real Time Collaboration platform

- Sandia started piloting IBM Sametime ~2003
- We went through a technology evaluation and decided to move to Microsoft Live Communications Server 2003 in ~2004
- We deployed Live Communications Server 2005 in ~2005
- Microsoft Changed the product to Office Communications Server 2007
- We deployed OCS 2007 in 2007, and enabled external business partner collaboration with on premise Live Meeting
- We skipped OCS 2007 R2
- Microsoft has once again rebranded the product to Lync
- Microsoft has combined Office Communicator and Live Meeting into one simple concise client also simply called Lync
- Lync 2010 deployed and federation with external business partners enabled ~2011
- 2013, Sandia has completely migrated the backend infrastructure to Lync 2013, and is Client deployment completed
- 2015, Sandia performed an in place upgrade of all Lync 2013 servers to S4B 2015