

Adopting Microsoft Lync at Umeå University - A migration from legacy PBX to Lync 2013

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Keywords

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1. SUMMARY

In 2013 Umeå university migrated from a traditional PBX (PBX is a system that connects telephone extensions of a company to outside public telephone network as well as to mobile networks¹) to Microsoft Lync 2013 - an enterprise-ready unified communications platform that besides voice also supports presence, instant messaging, video calls and online conference meeting.

This presentation is about:

- The recommendations and the fall pits around a migration to Lync
- The experience acquired from what the users encountered when they adopted the new way of using their computers.
- The importance of a thorough analysis and plan for shaping your infrastructure and set-up to follow best practice prior the implementation itself.

The main success factors of this project is, thorough hard ware planning, follow best practice, train the end user and let the product adopt within the organization, follow up what the common user lacks and finally plan how you can precede the problems that comes tomorrow.

2. BACKGROUND

Prior to Lync and from as early as 2005, Umeå University had analyzed various available telecom solutions besides a traditional PBX. But the overall valuation of earlier studies and test pilots performed had the same recurrent results - either was the product itself, nor the mature enough for the available UC-solutions that were presented on the market.

So when Microsoft finally launched Lync 2010, an additional pre-study and cost analysis of what it would cost to implement a technical environment for 500 users started. This study resulted in an implementation of a pilot environment based on Lync 2010 who was soon to be filled with adequate users from a broad variety of represented roles. With good test results, Gartner research, satisfied user groups, and a stable enough environment the IT Office so decided that Lync should be implemented at Umeå University. Lync 2013 had the required key factors including Mobile device support, Skype integration and Video-Conferencing enhancements needed and would now replace Umeå University old telephone exchange solution.

The University have for some time, the email system, Exchange. Lync uses a number of features in Exchange and it was therefore relatively easy to integrate the two systems together.

University employees have a relatively large experience working with Microsoft Office Tools. It facilitates the introduction of Lync. At Umeå University, we have approximately 3400 Lync extensions and 1600 Smartphones.

¹ http://en.wikipedia.org/wiki/IP_PBX

3. PLANNING

A one year (2700 hours) project of total of 30 persons and a 3.5 million SEK budget was initiated early 2013. The first thing that would be done was to plan the implementation of the infrastructural design principles of Microsoft best practice. Implementation of a Reverse Proxy due to a one-side open network along with a network analysis concerning QoS where two important activities that the project spent the first month with.

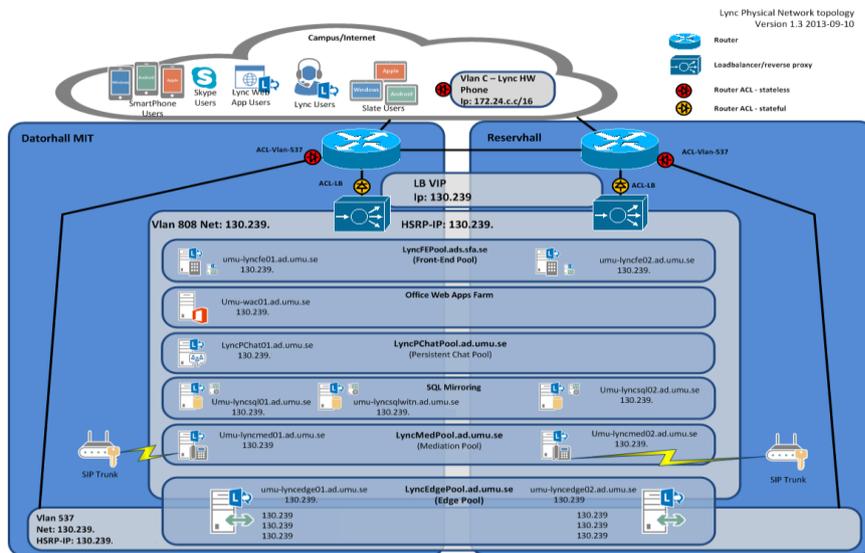
Phases	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
Board meetings			1	2	3		4		5		6		
Preparation phase	Pre Stage												
Project start													
Planning phase		Stage 1								Migration			
Implementation and configuration of Base solution				Stage 2		Stage 2.1							
Implementation and stabilisation of Clients				Stage 3		Stage 3.1							
Launch and education		Stage 4				Stage 4.1							
Ending and acceptance													
TRIO-implementation								Stage TRIO					
	Planned												
	Outcome												
	New												

This is a picture of a simplified gantt-schema shows the project’s different phases. As shown above the scheduled period for activities is marked in Green and the new and extended period outcome is highlighted in Blue.

4. IMPLEMENTATION

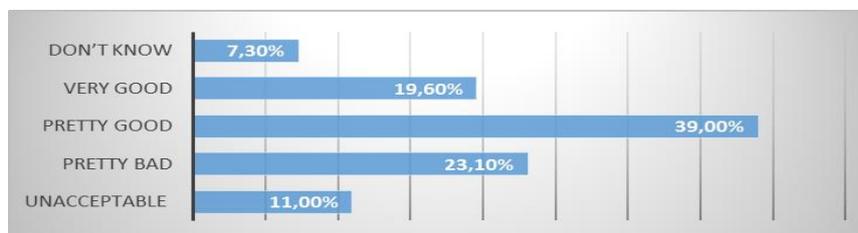
Most of the architecture is implemented as a High Availability solution (HA) with dual sets of each role. The exceptions are the Office Web Apps Server and Persistent Chat, as they are not considered to be critical. All server roles can be expanded with more servers as necessary as they are set in a working farm and pools. Physically, the servers are located in two different data centers, but they operate in the same VLAN. Edge and Mediation Servers also have additional network cards in other VLANs. This is done to communicate with the internet and SIP-trunk with the provider. Each role uses DNS load balancing for SIP-traffic and media streams and hardware load balancers for HTTPS (for Front-End server’s web services, and Office Web Apps).

The Lync roles Front-End, Edge, and Mediation is Enterprise Edition Pools implemented with two servers in each pool. The Office Web Apps Server is implemented in a farm and Persistent Chat consists of a server in an Enterprise Edition Pool. Two of SQL servers form a mirror set with a third server as witness for automatic failover. Lync file share is placed in a DFS constituted by two nodes on SQL servers.



5. THE USERS AND THE NEW SOFTWARE

In week 5 of this year, the old exchange was shut down and a one old generation of technology went in the grave. From a user perspective, there have been some users that are not satisfied with Lync, from the IT-offices angle, much of the discontent comes from the fact that Lync does not work satisfactory on a Mac. In November we asked the following question in an online questionnaire: What is your overall opinion of Lync? We received a total of 372 answers broken down as follows:



The main focus is now addressing and identifying problems and shortcomings that the users experience. Highest on the list is a new improved Lync client for Mac as well as keep improving the online knowledgebase. We also have plans to solve some short-term problems with Lync smartphone-apps via offering mobile extensions through our operator.

6. CONCLUSION AND RECOMMENDATION

- Many are making calls via the computer now, for the first time and this doesn't work flawless due to some different factors. In many cases the problem relates to Lync on Mac environment compared to a much more supported Microsoft environment. In some cases the problem is a lack of education of the software itself, and in other cases there is a direct problem with the sound, both hardware- and software related. It will take a few months to be familiar and comfortable in the Lync environment but once the user get over the initial hump and are used to the Lync environment, the Lync technology works well and they will soon be happy with the new way of communicating.
- During the project, we have also been forced to replace our communications platform (TRIO). This has caused us a lot of extra work and unfortunately the new reference system has not worked to its full potential in the beginning. Many of these problems were linked to that Lync 2013 is new technology.
- To ensure good and high level quality in Lync the IT-Office therefore introduced a program that involves the whole administrative organization around addressing action plans for servers, data, computers, tablets and smart phones. In order to identify these problems, the project are using questionnaires and have direct contacts within institutions and departments. They are also using special methods to ensure the technical quality of Lync (a method called Call Quality Methodology, CQM). It should also be possible to use Lync in a variety of ways: the computer, smart phone, tablet computer or a special, fixed Lync telephone. The problem solving and actions are based mainly on our users and their reported errors, as well as the surveys we send out approximately every 4-6 months. Users influence, as well as their answers to these surveys makes a difference. To make this easier, from February and onward the IT-Office will be sending out the Lync questionnaire via 'chat' to a randomly selected 300 Lync users per month.
- The project has always operated under the assumption that Lync in smartphones is in a developmental stage. Users can expect that features will improve quickly given the large investments made in the area of smartphones. Smart Mobile is currently viewed as a complement to Lync on the computer. We have pointed this out in our training and information sessions.
- Many University employees use an iPad, iPhone or Samsung phone. In some cases, it has been noticed that certain models of iPhone 4S work very poorly with Lync. In other cases, the Smart Mobile is a very poor wireless device, requiring that you are near a WLAN transmitter in order to be able to use Lync. The answer to this problem is complex and all parties (both the university and Microsoft) concerned are working together to find an answer.

- To simplify ordering a Lync account, a web-based test system was integrated with our corporate directory. Subscriptions can be ordered by employees. Integration with the university's corporate directory will result in a much higher quality of information. This also means that responsibility for phone numbers in the group directory has moved from the person responsible at the institution level to the Lync support team until further notice.

- The wireless network has been expanded and fine-tuned to provide better performance and meet the growing demands of Smart Phones.

- The project are planning to offer training adapted to researchers and teachers in the spring. As usual, it will start this with one or more target institutions/departments. We are also building an inexpensive environment for video conferencing within the confines of the university. In 2014 we are planning to incorporate a solution that allows users to connect to Lync via the TANDBERG video conferencing system.

7. AUTHORS' BIOGRAPHIES



Mattias Holmlund is a Project leader at ICT, Umeå University since 2001. He was the technical project leader of this Lync project. His main responsibility was to allocate project resources for the technical implementation of the Lync environment. At the moment he is working on setting up a user framework for a support organization in a national project called "Ladok3-projektet".



Arne Vedefors is Telecom manager at the University of Umeå since 2004 and are responsible for Unified Communication and data networks. Prior to that, he has been responsible for strategies in mobile solutions at Telia mobile. His field of work has been in the telecommunications and IT sector.