Nubo on premise POC requirements for VMWare ESXi

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1.   About this document

This document describes the hardware, software, and network & settings requirements for Nubo VMWare ESXi on premise POC (Proof Of Concept) .

Please note that the following requirements apply only to the POC process and do not reflect the full-scale requirements for an organization-wide deployment of Nubo.

In Nubo, POC process usually involve between 20-30 concurrent user, only 2 VMs (explained in more details below), minimum Network, Hardware & Software requirements in order to demonstrate Nubo capabilities.

2.   Nubo POC Architecture Diagram
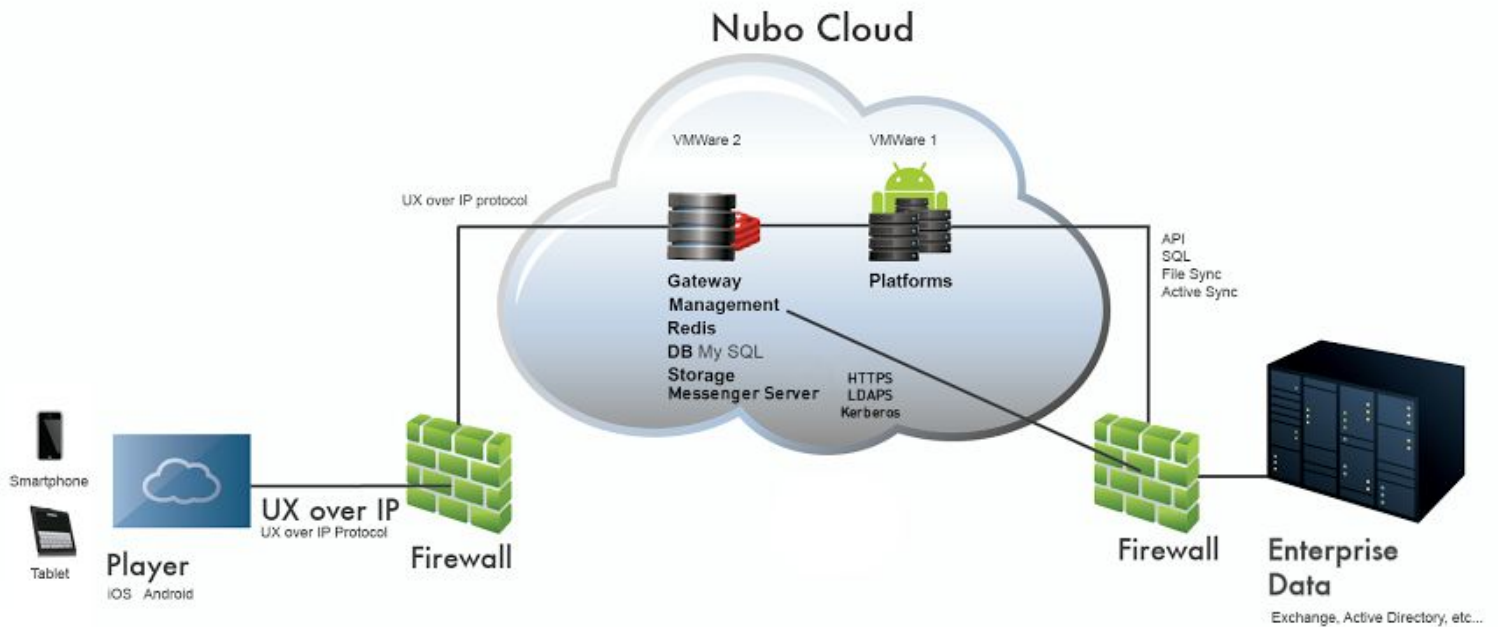
3. Hardware Requirements

In order to install Nubo for POC please make available resources (see table below) sufficient for 2 VMs (on VMWare ESXi). In addition, Nubo will provide 2 OVA files (one per VM) and restore the VMs. The 1st server will be used for Nubo platform installation and the 2nd server will be used for installing all other Nubo components i.e, Management, Gateway, MySQL DB, Messenger server, Redis DB and NFS.

Servers Specification:

	1st VM Platform Server	2nd VM- Management Server
Processors/CPU	Dual core xeon or equivalent	Dual core xeon or equivalent
Memory (RAM)	4GB	4GB
Free Disk Space	20GB	100GB

4. Software Requirements

This section will describe the required software for each and every server.

	1st server Platform Server	2nd server - Management Server
Operating System	Ubuntu Linux distribution	Ubuntu Linux distribution

In addition, Nubo's responsibility to install (as part of the initial installation) the following:

Component	Software	Comments
Management	Node.js	HTTP server
Redis DB	Redis	Cache database
Persistent Database	MySQL	Users data, permissions, apps, etc….
Gateway	Java 1.7	

Platform	Replace kernel with Nubo Kernel	
Messenger Server	Openfire	Instant Messaging server
Messenger Server	Jetty	Media support

5. Network & Settings Requirements

This section will describe the relevant ports and protocol in use between the different components in Nubo architecture and which settings needs to be made in order to allow communication between them.

Network settings required for Internet Access:

Source	Destination	Protocol	Port	Comments
Mobile device	Management (2nd VM)	HTTP/S	80/443	Initial authentication
Mobile Device	Gateway (2nd VM)	TCP (Over SSL)	7890 (7443)	UI Stream to client
Management (2nd VM)	GCM Service	HTTP/S	80/443	In order to send push notifications to Android clients (Important: this connection is over the internet)
Management (2nd VM)	APN Service	HTTP/S	80/443	In order to send push notifications to IOS clients (Important: this connection is over the internet)

Network settings required for Organization Resources:

Source	Destination	Protocol	Port	comments
Management (2nd VM)	Organization AD	LDAP/S	369/636	Fetch users on an interval basis
Management (2nd VM)	Organization AD	Kerberos	UDP:88 (by default)	If kerberos authentication required for user
Management (2nd VM)	Organization Exchange	HTTP/S	80/443	Register user to push notification using EWS.

Platform (1st VM)	Organization Exchange	Activesync	443	
Organization Exchange	Management (2nd VM)	HTTP/S	80/443	Enable EWS for sending push notification on new events on the exchange to Nubo.

Internal connection between Nubo components (no settings required):

Source	Destination	Protocol	Port	Comments
Management*	Platform	SSH	22/2222	Create/Launch user virtual mobile desktop
Management*	Storage	NFS	Dynamic Port	
Management*	Redis	TCP	6379	
Management*	MySQL	TCP	3306	
Gateway*	Redis	TCP	6379	
Gateway*	Platform	TCP	Dynamic Ports	Each application per user uses different port
Platform*	Management	HTTP/S	80/443	Control Panel/ Nubo Settings applications
Platform*	Gateway	TCP	8890/8891	UI Stream within Nubo architecture
Platform*	Storage	NFS	Dynamic Port	
Platform*	Messenger Server	XMPP	5222	Instant Messaging
Platform*	Messenger Server	HTTP/S	9090	Media support
Messenger Server	Management	HTTP/S	80/443	Push notifications
Messenger Server	MySQL	TCP	3306	

6. Additional Requirements

- Exchange server (office365 applicable as well):
    - Allow sync for mobile devices on ActiveSync protocol, open port 443 from Nubo platform server to Exchange
    - Allow EWS (Exchange Web Services) to support push notification from Exchange on new email events and calendar reminders
    - Allow Nubo to use Exchange (or provide other if exists) as SMTP server to send emails from Nubo during registration and authentication process (Exchange relay), open port 25 for that from Nubo management
- Setup firewall allowing access from Nubo VM's to organizational servers if necessary (mainly Exchange and DNS)
- Set up DNS name for Nubo Management Server when accessed remotely (i.e. nubo.mydomain.com), unless IP will be in use
- Certificate to support SSL communication from physical mobile devices on the selected DNS name. Nubo can provide the certificate for POC purposes upon request.