

# The ultimate Citrix XenMobile survival guide

Over 75 lessons learned, tips and recommendations, how to's, best practices, common pitfalls and more



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**Note :** For the purpose of this guide I am assuming that you are implementing XenMobile On premises, but for those of you who might be wondering, yes, XenMobile is available as a cloud solution as well. Have a look here:

<http://www.citrix.com/products/xenmobile/tech-info/cloud.html>

**Note :** Think about what you really need! In practice, you still see a lot of companies, who haven't been properly advised, implement the XenMobile Enterprise Edition without even thinking. Although I must admit, with Citrix currently offering a 20% discount on the Enterprise edition, it's tempting to do so. But what I mean to say is, you really need to think about your needs and options on forehand. For example, if it's pure hardware (read, mobile devices) that you'd like to manage and perhaps push some native apps along the way, than MDM might be all you need. If you need, or want, to be able to manage and secure all your business related applications and data separate from any personal applications and / or data that might reside on the same device, than you'll need the App Controller and ShareFile (Enterprise edition) functionality as well.

**Note :** Think about the following: Do we allow our employees to bring in their own personally owned devices? What types of devices are we actually talking about, do they include laptops, tablets, various kinds of Smart phones etc? Do we only support a specific vendor or brand? If they're company owned, do we allow any personal apps and data? What about social media (kind of a big one) ? How do we separate the two? And what happens if a device get's lost, stolen or somebody leaves the company? How secure do our corporate applications really need to be, does all data need to be encrypted? The Citrix XenMobile products page:

<http://www.citrix.com/products/xenmobile/overview.html?posit=glnav>

**Note :** And it doesn't end there: Do we allow remote access from mobile devices onto our internal network to interact with other, Windows based, applications and/or desktops for example? Who is responsible, or owns, the data? It's often is a fine line between personal and corporate data. What other types of applications (web, SaaS, Windows) do we allow or do our employees need too do their daily jobs? Are there any current security strategies, or data management policies, in place that we need to consider when bringing mobile devices into our network? If not, do we need to think about creating new ones? And you can probably think of a few more.

**Note :** As with most products the first step in successfully implementing XenMobile is to set up a PoC environment. This way you can get a feel of the product, play around with it a little bit and see what it is capable of in practice. Make sure to follow the guide lines below, they will definitely make your life a little easier!



**Note :** Citrix offers several PoC implementation kits, you will need to log in into Sales IQ for this.

- The XenMobile PoC kit: <http://www.citrix.com/skb/articles/RDY9633>,
- The ShareFile PoC kit: <http://www.citrix.com/skb/articles/RDY12201>
- The XNC deployment guide: <http://www.citrix.com/skb/articles/RDY10506>

**Note :** On the E-Docs website you'll find the XenMobile Solution Pre-Installation Checklist, use it! It's a life saver! You'll find it here:

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-prepare-xenmobile-checklist-con.html>

Make sure you check all the boxes, all pre installation check are required to guarantee a successful installation / implementation.

**Note :** Don't deploy everything at once, if it doesn't work you won't know where or what to troubleshoot, keep it simple and take it one step at the time.

**Note :** As a follow up on the previous note, breakup the process into 5 phases or stages. As per Citrix the five phases are: deploy the XenMobile Device Manager, deploy the XenMobile AppController, deploy the Citrix NetScaler Access Gateway, deploy Citrix ShareFile and finally integrate with Citrix XenApp and XenDesktop.

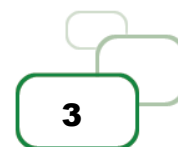
**Note :** Threat each phase as a separate PoC, but don't over do it. Evaluate success criteria at the end of each phase and do the same for any issues and or failures you might have bumped into along the way. Make sure you document everything.

**Note :** It's important to know which firewall ports need to be opened and with what reason! Make sure to involve the network team as soon as possible and ask them to open up the necessary ports if you can't, or aren't allowed to, do it yourself. Make this one of your high priority 'things that need to done'. Although opening a few ports is a 2 minute job, in practice these things can take days, networking teams are 'known' for that ;- ) Check out the XenMobile port requirements page:

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-deploy-component-port-reqs-n-con.html#xmob-deploy-component-port-reqs-con>

**Note :** Don't get over excited and remember to let all wizards finish before you close the browser session, trust me.

**Note :** Focus on the customers priorities, they are leading.



**Note :** Preparation is most important! Make sure you spend enough time on the pre-requisites and the scope of things. Factor in change control lead time, this tends to interfere with your schedule if you're not careful. According to Citrix an in depth PoC will take at least a couple of days, and with all components deployed, as with the Enterprise edition for example, a couple of weeks is no exception. Your customer needs to be aware of this as well.

**Note :** As mentioned, preparation is key, make sure to get everybody involved from the get go. Local system admins, management, end (power) users, everybody! Organize a project kick-off and take it from there. The deeper (although don't over do it) they are involved the more they will care, meaning a potential higher project success rate.

**Note :** There might be several reasons to do a PoC, think about yours. For example, a customer's need to understand and experience Citrix XenMobile, which, I guess, is kind of an obvious one. Perhaps you have to deal with a specific use case or focus on a specific feature or functionality. Maybe your customer is already impressed with XenMobile and just wants to let a few users test the overall user experience and administration.

**Note :** This one is often overlooked, and not just when it comes to XenMobile. Ensure that you educate your users, either during or before the official handover. They are the ones that need to 'accept' the new mobile landscape. The same applies to the system administrators that will take over the day to day administration tasks. Involve them during the build and configuration phase. In the end you will be thankful that you did, and so will they!

**Note :** Determine a pilot user group and inform them timely. User acceptance testing is very important, ensure that you have a decent UAC test plan ready and that it will be signed off when testing is successfully completed.

**Note :** If you are new to XenMobile, and most of us are, make sure to contact your Citrix representative and ask for the Citrix Demo Center. It's an easy to use cloud based environment used to demonstrate Citrix technologies that enable mobile work styles and power cloud services. The demo center allows partners to prepare for a demo and provision a virtualized environment for use in their sales conversations. More Information:

<https://demo.citrix.com>



**Note :** Before installing and configuring XenMobile, certain infrastructural components already need to be up and running. Therefore it's considered a good practice to inventory certain names and IP addresses on forehand so you'll have them ready when needed. Make sure to, at least, inventory the FQDN's and IP addresses of the following components:

- Database server(s) including the database names you'd like to use.
- NetScaler Gateway, including the NSIP, SNIP and virtual IP addresses.
- Active Directory, DNS, NTP and SMTP server addresses.

Complementary to the above, if not there or done already, you may also need to reserve or request (make sure to start this process in time) the following Internal and external IP addresses. It's important to note that these names and addresses already need to be up and running (resolvable by DNS) when installing / configuring XenMobile, otherwise you'll get stuck along the way.

- NetScaler Access Gateway
- Device Manager
- AppController

**Note :** You need to understand the network and security requirements and pre-requisites and ensure that they have been met and are in place. Talk to your network team.

**Note :** Certificates are used to secure connections, communication and to authenticate users. Therefore make sure to have an internal Certificate Authority (CA) up and running before installing / configuring XenMobile. If not, use self signed certificates instead. Depending on the components you are going to implement, here's an overview on the certificates needed including the accompanying XenMobile components for which they are used. Note that when using SSL Offloading, you'll need to install a trusted public SSL certificate on your NetScaler as well. Using this configuration you won't have to install a publically trusted SSL cert on your MDM server or App Controller.

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-deploy-certificates-con.html>

**Note :** Understand which component needs an external certificate and which component needs an internal certificate. Be sure to have your certificates ready to go prior to installing and configuring your XenMobile infrastructure, it can take some time so get your requests in early. Citrix recommends using named individual certificates as a best practice.

**Note :** Regarding certificates, wildcard certificates will work, SAN certificates are not supported. Just so you know.

**Note :** Make sure to get your hands on a test device, multiple if possible. You don't want to use your own mobile device for testing purposes. You will probably have to re-enrol multiple times, wipe your device, use different root CA's etc. try to get an Android or iPhone and at least one tablet as well.

**Note :** Ensure to have your license file ready to go, you will need it to successfully finish the installation, without it you'll get stuck!

**Note :** Citrix recommends to deploy the XenMobile components in a certain order, have a look here:

<http://support.citrix.com/proddocs/topic/xenmobile-87/xmob-understand-deploy-architecture-wrapper-n-con.html>

**Note :** As far as the XenMobile Device Manager is concerned, at the time of writing, Windows Server 2012 R2 is not supported.

**Note :** Perhaps not a real prerequisite per se, but definitely something to have a look at. Be aware that this is as secure as it gets. There is no way to guarantee a 100% secure device, since technology can only go so far, but it's a huge step in the right direction! Make sure you have your users read and understand your company security policies and have them sign some sort of user agreement before handing out your devices or giving them access to your corporate resources. I'm aware that this may sound like an ancient approach but it will definitely hold up in court, think about it.

**Note :** The MDX toolkit can only be installed on a Mac computer. It needs at least OS X Lion or higher. So make sure you have a Mac in place! This can either be a Mac Mini, iMac, Macbook Air or Macbook Pro. Remember that mobile applications, iOS and Android, first need to be wrapped before they can be managed by the AppController.

**Note :** The MDX Toolkit requires the Java Development Kit (JDK) 1.7. or newer. You can download the JDK 1.7 from the Java SE Development Kit Downloads on the Oracle web site. The instructions for installing the JDK on Mac OS X are on the Computech Tips web site:

<http://compugethertips.com/133/install-java-se-7-mac-os-x>

**Note :** As mentioned the MDX toolkit only runs on Mac OSX, but... it doesn't work on a virtualized Mac!

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-appwrap-deploy-mdx-toolkit-con.html>



**Note :** Before a mobile application can be wrapped it first needs to be ‘signed’ by Apple or Android. Once your app gets signed, Apple will provide you with a provisioning profile and a corresponding certificate. In the case of Android you’ll receive a digital certificate whose private key is held by the application’s developer. Once signed by Apple, you will be legally allowed to distribute the application to your users according to Apple’s EULA. To sign iOS applications you will need an Apple Developer Account, there are two:

- iOS Developer Enterprise Program \$ 299 / Year
- iOS Developer Program \$ 99 / Year

The \$ 99 / year account may sound appealing but you will have to enter all device ID’s on forehand with a maximum of a 100 devices. With the \$ 299 account this isn’t an issue and the number of device ID’s is basically unlimited. Citrix recommends going with the Enterprise program as well. Another important one: Enterprises will need the 299\$ account, as the 99\$ only entitles you to submit apps to the public AppStore but not to have Enterprise in-house apps that you may distribute without publishing on the public AppStore.

Check out Apple’s website <https://www.developer.apple.com/programs/start/ios/> or consult with one of Apple’s representatives for some more, detailed, information. Also, I’ve been told that the enrolment process for the Enterprise Account can take some time so make sure it’s available before you start building.

**Note :** Be aware that application signing and wrapping also applies to applications that are developed in-house. This goes for both iOS and Android. And for those of you familiar with the Worx application suite, yes, Worx Web, Mail and the recently introduced Worx Notes, Edit and Desktop also need to be signed and wrapped as well.

**Note :** Consider implementing High Availability using a Citrix NetScaler. Again take it step by step, implement one XDM and or XAM server to start with, make sure it functions the way it should and than add in a second node and take it from there.



**Note :** With regard to the StoreFront integration; know that Storefront can query different content providers like the XML (broker) service for XenDesktop and XenApp resources as well as AppController for access to ShareFile data, web, SaaS and mobile applications. Be aware that you will need to configure a trust between these two components for this to work, this is initiated from the App Controller. This way we can have all of our applications in one central store.

<http://www.basvankaam.com/2014/04/28/how-to-integrate-storefront-into-xenmobile-and-than-what/>

<http://support.citrix.com/proddocs/topic/appcontroller-28/xmob-appc-connect-users-config-sf-windowsapps-tsk.html>

**Note :** Worx Home can only communicate with the AppController. Citrix Receiver can communicate with both StoreFront and the AppController.

**Note :** Worx Home can only be installed on mobile devices, it won't work on desktop machines. Citrix Receiver works on both.

**Note :** Citrix recommends using Worx Home to connect to AppController to subscribe to and launch Mobile, Web and SaaS applications, and the MDM server for overall management, something that will happen automatically when enrolling the mobile device. However, when StoreFront aggregates the AppController, as mentioned earlier, you will use Citrix receiver to contact StoreFront. Be aware that using this configuration you will only see Web and SaaS applications published through AppController, no Mobile applications. These will only be visible using Worx Home, and thus mobile devices.

**Note :** Think about using the AppController to publish internal and external Web and SaaS applications to your desktop users as well. There might be a use case for this.

<http://www.basvankaam.com/2014/04/28/how-to-integrate-storefront-into-xenmobile-and-than-what/>

**Note :** When you start enrolling devices configure an MDM policy that pushes the Citrix receiver, and any other software and or data that might be needed, to the mobile device.

**Note :** Scale and size with the future in mind, short and long term. Although it might be hard to figure out where you will be at a year from now, it is still something worth thinking about. Although one or two extra MDM servers probably won't be an issue, you also have to deal with potential network bandwidth limitations, NetScaler load and throughput, additional licensing and several other backend systems.





**Note :** Make it future proof. As you are well aware, XenMobile is under constant development which automatically leads to frequent updates, every three months to be exact! (give or take a few weeks). So you need to be flexible.

<http://support.citrix.com/proddocs/topic/xenmobile/xmob-landing-con.html>

**Note :** When it is time to start enrolling devices it is a good practice to leverage AD security groups and deploy incrementally. Start with a few users per week and ramp up accordingly. Schedule initial enrolments in blocks.

**Note :** During the setup and configuration of XenMobile you'll need several (service) accounts with (local) administrator privileges. For example, you'll need a SQL service account with administrative privileges local to the SQL server and its instances, including Creator, Owner, and Read/Write permissions. You will also need a MDM server service account with local administrative privileges, although it (the MDM server) doesn't need to be a member of the domain. The same applies to App Controller, you'll need an Administrative account for installation and configuration purposes.

**Note :** XenMobile needs to be able to contact Apple's APNS, which stands for Apple Push Notification Services. Now this has been a point of discussion for some time now. Officially it's stated that Apple's APNS ports need to be opened continuously, which isn't a preferred set up when it's placed on your internal network. And even in your DMZ you would want to prevent such a configuration. It's also known by most that APNS traffic can't be fronted with a reverse proxy, it needs a direct connection. Another potential security flaw. However, I've found multiple articles discussing the placement of a XenMobile MDM server behind a proxy, APNS traffic included. I've also spoken to a few people that have successfully implemented XenMobile MDM this way. The APNS ports are only needed for outbound traffic! So it doesn't need to have a two way continuous connection with the outside. You will need this information when considering where to place your MDM server, DMZ or internal network. Note the ports that are used by APNS, 2195, 2196, 5223, 8443.

<http://support.citrix.com/article/CTX136706>

**Note :** In addition to the above you will also need an APNS certificate. It should contain the public FQDN of the XenMobile enrolment URL configured earlier. The signing request will first need to be sent to Citrix (open up a support case for this). The signed request then needs to be forwarded to Apple, they also need to sign it. You can imagine this taking some time so plan accordingly. Follow these steps:

<http://support.citrix.com/proddocs/topic/xenmobile-87/xmob-dm-config-requesting-apns-con.html>



**Note :** For auto discovery to work with XenMobile, users enrol using their UPN (User Principal Name) and their device gets enrolled and configured automatically, you will need to contact Citrix Technical Support and open up a ticket. Auto discovery requires that you send the Citrix Cloud Ops team specific deployment information. All you need to know right here:

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-dm-connect-enable-auto-disc-enrollment-tsk.html>

**Note :** When users authenticate at StoreFront, the StoreFront authentication service will forward the users credentials to other components like App Controller, creating a single sign-on experience. AppController lets you configure SSO on a per application basis. However, SSO isn't available for every application by default, this will differ per application.

**Note :** As of App Controller version 2.8 (at the time of writing we are at version 2.9) we can configure App Controller to also display and launch Windows based applications and/or desktops. They will be displayed next to our mobile, web and SaaS apps already there, using Worx Home from our mobile device, like Citrix prefers. It's mainly because of this feature that the App Controller will potentially play a bigger role within your infrastructure somewhere in the near future. So yes, AppController has its own app store as well!

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-appc-connect-users-config-storefront-tsk.html>

**Note :** If we use Worx Home to contact AppController and we try to launch a windows application or desktop it will automatically leverage Citrix receiver in the background. So it needs to be installed as well!

**Note :** Check out my blog below for instructions on how to configure the StoreFront / AppController integration and vice versa:

<http://www.basvankaam.com/2014/04/28/how-to-integrate-storefront-into-xenmobile-and-than-what/>

**Note :** Think about how you would like to present your applications to your users, are you going to use storefront, AppController or a combination of both? You can probably think of a use case for all three.

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-appc-connect-users-config-sf-windowsapps-tsk.html>

**Note :** No matter how we configure App Controller, we will still need to set up StoreFront along side it if we want to be able to also view and launch our Windows Based apps and desktops. App Controller doesn't have the, XML Broker service, application enumeration capabilities that StoreFront has. Without StoreFront, App Controller wouldn't be able to 'find' and show you your (Windows) applications and/or desktops. If mobile, web and SaaS like apps are all you need, go ahead and leave StoreFront out.

**Note :** Keep in mind, that, no matter which combination you implement, even if it's just StoreFront for example, you will always need Worx Home for mobile device enrolment if MDM is implemented as well. Once enrolled, you'll continue to use Worx Home to contact App Controller from your mobile device, assuming it's implemented, and Receiver to contact StoreFront to access your Windows applications and desktops, as recommended by Citrix.

**Note :** What works best for you? A lot of companies will most likely prefer storefront over AppController as the primary platform when it comes to subscribing and launching their applications. This is because most users will probably already be familiar with either web interface and or StoreFront, keeping it simple. Also, storefront offers some additional features that the AppController can't like session pre-launch, lingering, smart card authentication and a few more.

**Note :** When troubleshooting XenMobile, make sure to check out the XenMobile Logs Collection Guide. A short description: Support bundles from XenMobile Device Manager, App Controller and NetScaler Gateway servers contain system and deployment details, log files, thread and memory information, installed patches and other diagnostic information. You will find it here:

<http://support.citrix.com/servlet/KbServlet/download/36131-102-709297/XenMobile%20Logs%20Collection%20Guide.pdf>

**Note :** Another great resource for finding configuration and troubleshooting tips is Citrix TV. It contains over 200 XenMobile instruction videos ranging from simple installation walk troughs to enhanced troubleshooting sessions. Start here:

<http://www.citrix.com/tv/#search/xenmobile>

**Note :** In addition, below you will find a recorded webinar specifically aimed at troubleshooting Citrix XenMobile environments, I'll save you the search.

<http://www.citrix.com/tv/#videos/11597>

**Note :** Have you ever heard of Citrix Cerebro? No? Neither had I. Kees Baggerman brought it up not to long ago. It is a diagnostic tool from Citrix to help analyze and debug XenMobile infrastructures, including your NetScaler Gateway setup. Very useful. Kees wrote an article on it, here you will find what it is about in more detail including a 'how to' video and a download link to Cerebro itself:

<http://blog.myvirtualvision.com/2014/07/11/citrix-cerebro-musthave-for-your-xenmobile-netscaler-toolbox/>

**Note :** You might want to consider NetScaler Insight; it is based on the innovative open standard known as AppFlow. A quote, the new NetScaler Insight Center leverages existing networking real estate – uniquely situated at key focal points in the application path - to provide a 360-degree view for all mobile, web and virtual desktop traffic. The result is a network big data analytics platform that enables unprecedented visibility and real-time insight into datacenter traffic. Although it is primarily focuses on XenApp and XenDesktop deployments (XenMobile might be next), it may still be of use. More information can be found here:

<http://www.slideshare.net/davidmcmg/using-netscaler-insight-to-troubleshoot-network-and-server-performance-issues>

**Note :** There will come a time that you're done building, configuring etc. than ask yourself this, where do my users go when they have questions or experience issues with their mobile devices, hard or software related? It might be good idea to set up a first line of support solely dedicated to mobility, just for the time being.

**Note :** It applies to your users, your system administrators but also to your Helpdesk staff, they need to be educated with regards to mobility and XenMobile in particular. Show and teach them about some of the more common issues they might encounter and how to deal with them. Build up a 'known issues' knowledge base of some sort. Also, you might want to consider adding some extra capacity to your helpdesk, or first line of support, during the first few weeks after you start enrolling devices.

**Note :** It is important to know when to contact, second and third line, Citrix and or Partner support. You need to establish clear guidelines on this. Here are some options available with regards to Citrix's support and maintenance programs:

<http://www.citrix.com/support/programs.html>

**Note :** XenMobile uses a database to store its configuration, although this can be local, I would recommend using a SQL database configured for high availability.

**Note :** What about ShareFile? Have you thought about the option the include into your infrastructure as well? ShareFile, A cloud-based file sharing service that enables users to exchange documents easily and securely. ShareFile provides users with a variety of access options, including a web-based interface, desktop tools, and integration with Microsoft Outlook. More information:

<http://www.citrix.com/products/sharefile/overview.html?posit=glnav>

**Note :** When all is in place, how are your users going to authenticate? It is important to think about this on forehand, because once implemented your users will need to re-enrol their devices if you choose to change you authentication method afterwards. Have a look at some of the authentication methods available:

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-deploy-authentication-wrapper-con.html>

**Note :** To provide your users with a smooth user experience I would suggest to look into certificate based authentication. This works in combination with Worx Home Pin providing you with secure two factor authentication, it will leverage Active Directory in the background. Your users will be able to configure an easy to remember (for them anyway) PIN number with which they can log onto their mobile devices and subscribe to and start applications. Something that would be greatly appreciated by your users since we all know how filling in 'normal' passwords on mobile phones or tablets can be somewhat awkward.

**Note :** I already highlighted APNS, for Android this works differently. You will need to configure a MDM scheduling policy otherwise you won't be able to update enrolled Android devices.

**Note :** Have you considered using so called 'Shared Devices'? This feature enables enterprise users to share a device while receiving only the applications related to his or her function within the company. Once a user sings off the device will automatically become available for the next user to sign on. Using this method you won't have to worry about having to constantly wipe and re-enrol a particular device, or multiple for that matter, when a device needs to be shared among certain co workers. Can you think of a use case for this? Check:

<https://www.youtube.com/watch?v=CFc1vI2wQs>

**Note :** Check out this article to improve battery life with WorxMail:

<http://blogs.citrix.com/2013/09/16/improving-battery-life-with-worxmail-sta-to-the-rescue/>

**Note :** There is still a lot of discussion whether to deploy the MDM server in the DMZ or on your (more) secure internal LAN. Both are valid options although I would prefer the DMZ for now. Not to long ago I wrote an article on this discussing the various options, the pros and cons etc. You'll find it here:

<http://www.basvankaam.com/2014/05/26/should-we-place-it-in-the-dmz/>

**Note :** Understand that each component has a slightly different form of high availability. StoreFront multi server deployment, AppController failover pair, MDM clustering, NetScaler HA (already mentioned earlier). Note that when implementing HA of some sort you will also need extra IP addresses for AppController and NetScaler.

<http://support.citrix.com/proddocs/topic/xenmobile-86/xmob-dm-manage-ha-wrapper-con.html>

**Note :** Think about your users application subscriptions. According to Citrix, mobile users don't necessarily want the same applications / subscriptions on their mobile devices as they have on their corporate endpoints, and rightfully so if you ask me. You probably don't want to access a Windows based published desktop from you mobile phone right? So why bother showing it as a subscribed resource? It works like this:

App Controller and StoreFront both handle their subscriptions independently from each other, creating separate lists. Depending on your configuration you can subscribe to exactly the same applications using either one. However, when using Receiver to contact StoreFront, either natively installed or through Receiver for Web, it will leverage StoreFronts (Windows) Extensible Storage Engine database to store its subscriptions. They are stored locally and are automatically propagated to other StoreFront servers by the subscription store service.

When using Worx Home to connect to App Controller, unless you subscribe to the exact same applications, you'll build up a separate set of subscribed applications which will differ from StoreFront. Your subscriptions will be handled and stored by App Controller. With this is the back of our heads, and following Citrix's recommendations, you might want to use Worx Home on your mobile device(s) and subscribe to all the Mobile, Web and SaaS apps you need, while using Receiver, to connect to StoreFront, on all your other endpoints. This way you'll end up with two separate application subscription lists, one for your mobile device(s) and one for your office workstation or laptop for example.

**Note :** NetScaler will be part of almost all XenMobile deployments. Make sure you understand its power and possibilities! Load balancing for StoreFront and MDM, Access Gateway, Micro VPN's, session policies, XenMobile NetScaler Connector, SSL offloading, caching and more. The NetScaler product page:

<http://www.citrix.com/products/netscaler-application-delivery-controller/overview.html?posit=glnav>

**Note :** When working in large environments, meaning a lot of people constantly connecting, you need to keep an eye on your network bandwidth availability. Especially when using MDX enabled applications combined with the Micro VPN feature. Although it's called a Micro VPN, it is basically a full VPN tunnel on a per application basis. So if a user starts 4 MDX enabled applications there will also be 4 Micro VPN's active. You can probably imagine the load this might generate with hundreds, or thousands, of users constantly opening and closing applications. Citrix talks about 3 to 5 times more 'load' when compared to traditional LB or ICA proxy traffic. Due note that you don't actually need the Micro VPN feature to be able to use MDX enabled applications, it's a choice. Although it's considered a best practice to implement Micro VPN's whenever possible. NetScaler platform and specifications overview:

<http://www.citrix.com/products/netscaler-application-delivery-controller/platforms.html>

**Note :** Prior to installing the MDM server make sure to disable Microsoft's User Access Control and TCP/IP 6.

**Note :** Although this guide focuses primarily on installing, configuring and troubleshooting Citrix XenMobile I still thought it would be worth a mention. Just recently Citrix posted a new blog with regard to upgrading the MDM server from version 8.7 to 9.0 which, at the time of writing is the most recent version. It includes some general information and describes the necessary steps to take for upgrading your MDM infrastructure:

<http://blogs.citrix.com/2014/07/14/mobility-experts-upgrade-xenmobile-device-manager-xdm-from-v8-7-to-v9-0/#.U8P4HmxJojw.twitter>

**Note :** Your mobile devices get managed by configuring policies and deployment packages, be aware that you will have to create separate policies and deployment packages for every Operating System, iOS, Windows, Android etc. you are managing. Deployment packages can also be used to push applications, .ini files, registry keys, documents etc.

<http://support.citrix.com/proddocs/topic/xenmobile-90/xmob-dm-manage-create-deploypkg-wrapper-con.html>

**Note :** The type and number of policies available per OS \ vendor will greatly differ. You won't be able to configure the same policies and settings for Windows as for Android for example, there is a big gap between the two, the same applies for iOS as well. Mobile OS policy options depend on the available API's per OS. If you are interested in a complete overview on all policies per platform I suggest that you contact one of your Citrix sales representatives directly as such a list, unfortunately, isn't publically available.

**Note :** As an addition to the above, MDX enabled applications manageable by AppController, only apply to the iOS and Android platforms.

**Note :** Last but not least, when it's time to think about which policies to implement, here's a small list to get you started:

<b>The 5 must have Magic MDM policies:</b>	<b>Regional or user / device specific policies:</b>	<b>Worx App policies:</b>
End-User terms and conditions	Device restrictions	Copy and paste
Devices passcodes	Location services	How documents open
Software inventory	VPN connections	Device restrictions, camera, microphone, GPS etc.
Company WiFi, setup a secure network	PKI / user identity certificates	Login security
ActiveSync Mail	Application push	Micro VPN tunneling vs open networking
	App store	WiFi control.
	Device platform specific policies, like KNOX, iOS 7 etc.	iCloud restrictions
	Jail broken	Printing.
	Download and authorization	



Hope this helped!

Resources and reference material used:

1. <http://blogs.citrix.com/2013/05/06/xenmobile-lessons-learned-from-the-field-2/>
2. <http://rink76.wordpress.com/2014/05/05/citrix-xenmobile-lessons-learned-in-real-life/>
3. <http://www.slideshare.net/davidmcg/managing-a-xenmobile-enterprise-environment>
4. <http://www.basvankaam.com/2014/05/12/xenmobile-prerequisites-what-do-we-need-and-how-does-it-all-fit-together/>
5. <http://www.virtues.it/2014/06/e2evc-brussels-xenmobile-mega-session/>
6. <http://blog.myvirtualvision.com/2014/07/11/citrix-cerebro-musthave-for-your-xenmobile-netScaler-toolbox/>
7. <http://support.citrix.com/proddocs/topic/xenmobile/xmob-landing-con.html>
8. <http://www.citrix.com>