Dell Wyse Management Suite

Version 1.1 Deployment Guide



Notes, cautions, and warnings

- () NOTE: A NOTE indicates important information that helps you make better use of your product.
- △ CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
- Marning: A WARNING indicates a potential for property damage, personal injury, or death.

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Introduction

Wyse Management Suite v1.1 is the next generation management solution that lets you centrally configure, monitor, manage, and optimize your Dell Wyse thin clients. The new Suite makes it easier to deploy and manage thin clients with high functionality and performance, and ease of use. It also offers advanced feature options such as cloud versus on-premises deployment, manage-from-anywhere using a mobile application, enhanced security such as BIOS configuration and port lockdown. Other features include device discovery and registration, asset and inventory management, configuration management, operating system and applications deployment, real-time commands, monitoring, alerts, reporting, and troubleshooting of endpoints.

This document provides a deployment strategy of Wyse Management Suite in a single virtual machine or server in private cloud to support management of up to 120,000 devices.

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Hardware requirements

The following table lists the prerequisites to deploy Wyse Management Suite on a single server or virtual server on private cloud:

Table 1. Hardware requirements

Description	10000 devices or less	50,000 devices or less	120,000 devices or less	Software repository
Operating system	Microsoft Windows Server French, Italian, German, and	rted language pack—English,		
Minimum disk space	40 GB	40 GB	200 GB	120 GB
Minimum memory (RAM)	8 GB	16 GB	32 GB	16 GB
Minimum CPU Requirements	4	4	16	4
Network Interfaces (assigned IP addresses)	1	1	4	1
Network Communication Ports	the firewall exception list. T Management Suite console clients. • TCP 443—HTTPS con • TCP 8080—HTTP con • TCP 1883—MQTT con • TCP 3306—MariaDB (• TCP 27017—MongoDB	 TCP 443—HTTPS communication TCP 8080—HTTP communication(optional) TCP 1883—MQTT communication TCP 3306—MariaDB (optional if remote) TCP 27017—MongoDB (optional if remote) The default ports used by the installer, may be changed to an alternative port		
Supported Browsers	Internet Explorer version 11 Chrome version 58.0 and la Edge browser on Windows Firefox version 52.0 and lat	nter —English only		

() NOTE:

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Software can be installed on a physical or a virtual machine.

The software repository and the Wyse Management Suite server can have the same operating system.

Wyse Management Suite architecture

This chapter contains the installer components of the Wyse Management Suite.

The following are the Wyse Management Suite installer components:

- · WMS Web Application—Application Server that hosts Wyse Management Suite.
- · Memcached—Used to Cache data for performance and scalability.
- · MQTT—Used for push notifications to devices.
- · MongoDB—Database used for devices, configurations.
- · MariaDB—SQL Database for performance and scalability.

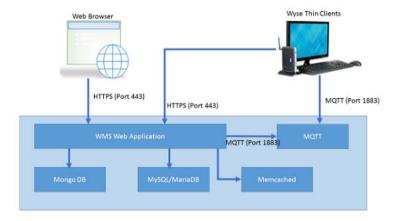


Figure 1. Wyse Management Suite architecture

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Deployment architecture

This chapter contains the deployment architecture details for Wyse Management Suite v1.1.

The Wyse Management Suite v1.1 supports up to 1,20,000 connected devices.

The single server deployment solution is easy to maintain, and you have an option to deploy Wyse Management Suite, using multiple servers depending on your deployment scenario.

You can also deploy customize your deployment for 50,000 devices or more number of devices depending on the deployment setup.

Deployment on a single server to support 50,000 devices and above

This section explains Wyse Server Management Suite deployment on a single server to support 50,000 devices and above.

The minimum hardware requirement on a single server for 50,000 devices is:

Table 2. Hardware specification

Application detail	Hardware specification
Wyse Management Suite 1.1	4 CPUs, 16 GB RAM, 40 GB HDD

The following diagram explains deployment of Wyse Management Suite v1.1 on a single server.

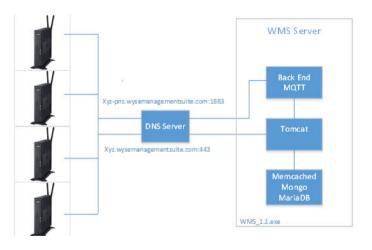


Figure 2. Single server deployment — 50000 devices

Deployment on a single server to support 1,20,000 devices

This section explains Wyse Server Management Suite deployment on a single server to support 1,20,000 devices.



The minimum hardware requirement on a single server for 1,20,000 devices is:

Table 3. Hardware specification

Application detail	Hardware specification
Wyse Management Suite 1.1	16 CPUs, 32 GB RAM, 200 GB HDD

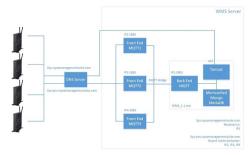


Figure 3. Single server deployment — 1,20,000 devices

FE MQTT Servers separated from the Wyse Management Server

This section explains about the architecture of FE MQTT Servers separated from the Wyse Management Suite server. This approach reduces the overhead on the Wyse Management Suite server in handling the number of TCP connections that needs to be supported. Each of the FE MQTT servers may be deployed on a separate server or on a single server.

The minimum hardware requirements are:

Table 4. Hardware requirements

Application detail	Hardware specification
Wyse Management Suite 1.1	8 CPUs, 16 GB RAM, 200 GB HDD, 1 network interface
Each FE MQTT server deployed on separate servers.	4 CPUs, 8 GB RAM, 40 GB HDD, 1 network interface
FE MQTT Server deployed on a single server.	8 CPUs, 16 GB RAM, 80 GB HDD, 1 network interface

The following diagram depicts the architecture of FE MQTT Servers separated from the Wyse Management Suite server.

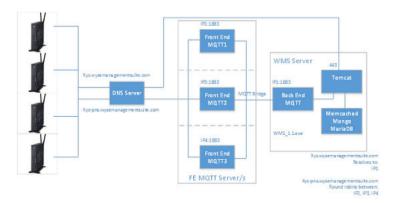


Figure 4. FE MQTT Servers separated from the Wyse Management Suite server

Deployment architecture with a separated database server

This section explains about the deployment architecture of Wyse Management Suite with a separated database server. MongoDB and MariaDB may be on the same server or on its own individual servers.

The following diagram depicts the deployment architecture of Wyse Management Suite with a separated database server.

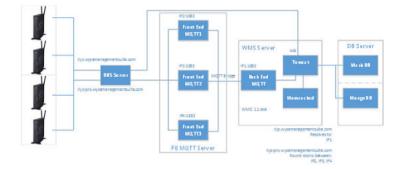


Figure 5. Wyse Management Suite with a separated database server

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Deploying and configuring Wyse Management Suite

This chapter describes the deployment and configuration of Wyse Management Suite v1.1 on a single server to support up to 1,20,000 devices.

The tasks involved in deploying Wyse Management Suite v1.1 on a single server are:

- · Preparing the server
- Configuring DNS
- Installing Wyse Management Suite v1.1

You need to perform the following steps to deploy Wyse Management Suite v1.1 on a single server to support 1,20,000 devices:

1 Login to your system using valid credentials. To check that the server has four network connections available, and get four IP addresses that you can use to work with the server.

The following window is displayed.

0 💿 - 🛧 🜆	e Network and Internet	 Network Connections 	V C Search N	Vetwork Connections 👂
Organize 🔻)II • 🔟 🔞
Name	Status	Device Name	Connectivity	Network Catego
Ethernet0	wyselab.com	Intel(R) 82574L Gigabit Network	Internet access	Domain network
Ethernet1	wyselab.com	Intel(R) 82574L Gigabit Network	Internet access	Domain network
Ethernet2	wyselab.com	Intel(R) 82574L Gigabit Network	Internet access	Domain network
Ethernet3	wyselab.com	Intel(R) 82574L Gigabit Network	Internet access	Domain network
	80			

Figure 6. IP address details

- 2 Configure each network connection with an IP address such that **Ethernet0** has the primary IP address **IP0** that is used by the Wyse Management Suite v1.1.
- 3 Assign Ethernet1, Ethernet2 and Ethernet3 with the remaining three IP addresses IP1, IP2 and IP3 that will be used by front end MQTT.
- 4 You must configure DNS and the server requires two DNS records. For example,

Xyz.wysemanagementsuite.com

Assigned with the primary IP address assigned to Ethernet0.

This domain is used by devices to communicate with Tomcat over HTTPS.

Xyz-pns.wysemanagementsuite.com

Round robin between three other IP addresses assigned to Ethernet1, Ethernet2 and Ethernet3.

This domain is used by devices to hold a persistent connection with front end MQTT servers.

- 5 Download and install the latest Wyse Management Suite v1.1 for private cloud. The following components are installed as services:
 - a Tomcat
 - b Memcached
 - c Mosquitto
 - d MongoDB
 - e MariaDB

Mosquitto that is installed by the installer must be configured as the back end MQTT; front end MQTT can be installed manually. Installer installs all the components at the following default directory.

Default installation directory is, Drive C:\Program Files\DELL\WMS.

Topics:

- Deploying front end Mosquitto
- · Deploying front end Mosquitto as a service
- Configuring back end Mosquitto to connect with front end Mosquitto
- Configuring front end Mosquitto in MongoDB
- · Remote repository
- Managing Wyse Management Suite repository service

Deploying front end Mosquitto

Wyse Management Suite v1.1 can handle up to 50,000 devices with a single instance of Mosquitto installed by the installer which serves both as front end as-well as back end Mosquitto. To support 1,20,000 devices, you need separate Mosquitto instances to handle the device connections. Since each Mosquitto instance can handle most of 50,000 device connections, you need at least three front end instances to handle 1,20,000 devices. Each of the three front end Mosquitto instances interacts through port 1883, and each instance will be bound to a particular IP address. In order to install three new instances of Mosquitto, you need three new copies of Mosquitto deployment as explained in the following steps.

1 Create three new directories inside Mosquitto folder as shown in the following entries.

C:\Program Files\DELL\mq1

C:\Program Files\DELL\mq2

C:\Program Files\DELL\mq3

- 2 Copy the contents in the directory C:\Program Files\DELL\WMS\Mosquitto to the folders created in the step 1.
- 3 Open the file in the directory C:\Program Files\DELL\mq1\mosquito.conf in a text editor.
- 4 Uncomment the property bind_address, in the mosquito.conf folder, and update the entry as, bind_address <IP1>.
- 5 Start mq1 to confirm that it is running on IP1 with port 1883. Do the following to check that mq1 is running on IP1:
 - a Open a command prompt window.
 - b Go to C:\Program Files\DELL\mq1 directory.
 - c Run the command, Mosquitto.exe -c mosquitto.conf at the command prompt.
 - d Open the Powershell window, and run the command, PS> get-nettcpconnection -LocalPort 1883 at the command prompt.
 - Confirm that the service is running with following values:

LocalAddress=IP1

6

LocalPort=1883

State=Listen

7 Repeat steps 3, 4, 5 and 6 for mq2 and mq3 with IP2 and IP3 respectively to complete the process.

Deploying front end Mosquitto as a service

This section describes how to deploy front end Mosquitto as a service.

1 Open a Windows PowerShell window with administrator privileges, and run the following commands to create a service entry in the registry and service database:

PS> sc.exe "Dell WMS: FE-MQTT1" binPath= "C:\Program Files\DELL\mq1\mosquito.exe run"

PS> sc.exe "Dell WMS: FE-MQTT2" binPath= "C:\Program Files\DELL\mq2\mosquito.exe run"

PS> sc.exe "Dell WMS: FE-MQTT3" binPath= "C:\Program Files\DELL\mq3\mosquito.exe run"

2 Open Windows Local Services from **Control Panel**, and confirm the services are created as shown in the following screen shot.

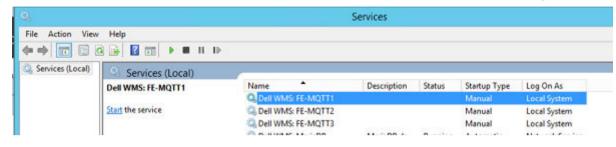


Figure 7. Services

INOTE: The Startup Type is Manual, and the Mosquitto Services are started by running a script. None of the Mosquitto Services (including 'Dell WMS: Mosquitto') should be started or restarted manually from this window.

Configuring back end Mosquitto to connect with front end Mosquitto

This section explains how to configure back end Mosquitto to connect with front end Mosquitto.

- 1 Open the file in the directory C:\Program Files\DELL\WMS\Mosquitto\mosquito.conf in a text editor.
- 2 Uncomment the property bind_address, in the mosquito.conf folder, and update the entry as, bind_address <IP1>.
- 3 Go to the **Bridges** section of the document, and add the following entries in the section.
 # connection <name>

#address <host>[:<port>] [<host>[:<port>]]

#topic <topic> [[[out | in | both] qos-level] local-prefix remote-prefix]

connection pns01

address <IP1>:1883

topic # out

connection pns02

address <IP2>:1883

topic # out

connection pns03

topic # out

4 Go to **Windows Local Services** and change the entry **Dell WMS: Mosquitto** service to start manually as shown in the following window.

			Se	rvices			
File Action View	Help						
🕈 🔿 🔝 🖬	a 🗟 📓 📷 🕨 🗰 🖬 🕨						
🐊 Services (Local)	Services (Local)						
	Dell WMS: Mosquitto	Name	•	Description	Status	Startup Type	Log On As
	A CONTRACTOR OF A CONTRACTOR	C DCOM	Server Process Laun	The DCOM_	Running	Automatic	Local System
Stop the service		C Dell WM	AS: FE-MQTT1			Manual	Local System
	Restart the service	C Dell WM	IS: FE-MQTT2			Manual	Local System
		C Dell WM	AS: FE-MQTT3			Manual	Local System
	Description:	Q Dell WM	45: MariaDB	MariaDB da	Running	Automatic	Network Service
	MQTT v3.1 broker	Q Dell WM	IS: memcached	memcache	Running	Automatic	Local System
		C Dell WM	45: MongoDB	MongoDB S	Running	Automatic	Local System
		C Dell Wit	IS: Mosquitto	MQTT v3.1	Running	Manual	Local System
		C Dell WM	45: Tomcat Service	Apache To	Running	Automatic	Local System
		Device.	Association Service	Enables nair		Manual (Trig	Local System

Figure 8. Start services manually

Configuring Mosquitto services startup script

This section explains how to configure Mosquitto services startup script.

- 1 Go to the directory C:\Program Files\DELL, and create a file mqttsvc.bat.
- Open the file mqttsvc.bat in text editor, and type the following entries into the file.
 @ECHO OFF

SETX -m MOSQUITTO_DIR "C:\Program Files\DELL\WMS\Mosquitto\mq1"

sc.exe start "Dell WMS: FE-MQTT1"

SLEEP 5

TIMEOUT /5

SETX -m MOSQUITTO_DIR "C:\Program Files\DELL\WMS\Mosquitto\mq2"

sc.exe start "Dell WMS: FE-MQTT2"

SLEEP 5

TIMEOUT /5

SETX -m MOSQUITTO_DIR "C:\Program Files\DELL\WMS\Mosquitto\mq3"

sc.exe start "Dell WMS: FE-MQTT3"

SLEEP 5

TIMEOUT /5

SETX -m MOSQUITTO_DIR "C:\Program Files\DELL\WMS\Mosquitto"

sc.exe start "mosquitto"

3 Save the mqttsvc.bat file.

- 4 Create a shortcut to the mqttsvc.bat file. This script is used to start all Mosquitto services when the server starts.
- 5 To configure Mosquitto Services Startup Script, go to Windows startup folder, and in the windows search window, type **Shell:startup** as shown in the following screen shot.

File Edit Session View Remot	op Connection Manager v2.7 Ie Decktops Tooks Help				- 0 ×
	Start			Ac	Search Everywhere ~ Shell:startup
		2			Shell:startup
	Server Manager	Windows PowerShell	This PC		Shell:startup

Figure 9. Windows startup

The C:\Users\Administrator\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Startup directory is displayed.

- 6 Copy the shortcut of mqttsvc.bat file into the folder.
- 7 Restart the server to confirm and test to confirm that four instances of Mosquitto are running on each of IP0, IP1, IP2 and IP3 on port 1883 as shown in the following steps.
 - a Open the Powershell window, and run the following command.
 PS> get-nettcpconnection -LocalPort 1883
 - b Confirm that there are at least four services are running with the following values. LocalAddress=IP0, IP1, IP2, IP3

LocalPort=1883

State=Listen

Configuring front end Mosquitto in MongoDB

MongoDB has **bootstrapProperties** collection that has among various parameters to configure URLs for Tomcat to connect to back end Mosquitto, and for devices to connect to front end Mosquitto. Installer by default would configure both parameters with back end Mosquitto as most users would be running with a single instance of Mosquitto.

- 1 Open a command prompt and navigate to C:\Program Files\DELL\WMS\MongoDB\bin directory.
- 2 Run following command at the command prompt.

>mongo stratus -u stratus -p <mongodbPassword> -eval "db.bootstrapProperties.update({'name': 'stratus.external.mqtt.url'}, {'name': 'stratus.external.mqtt.url', 'value': 'tcp://xyz-pns.wysemanagementsuite.com:1883' }, {upsert:true})"

3 Restart Tomcat Service identified in Local Services as Dell WMS: Tomcat Service.

Remote repository

Wyse Management Suite allows you to have local as well as remote repositories for applications, operating system images and so on. If the user accounts are distributed across geographies, it will be efficient to have local repository for each of the distributed user account so the devices can download images from its local repository. This flexibility is provided with **WMS_Repo.exe** software. The **WMS_Repo.exe** is a Wyse Management Suite file repository software that helps to create distributed remote repositories which can be registered with Wyse

Management Suite. When you need remote repository to download Remote Repository software from Dell Digital Locker or from Wyse Management Suite Portal from a public cloud, and install on the server/s where repository is required. The **WMS_Repo.exe** is available only for **Pro** license subscribers only.

The server requirements to install Wyse Management Suite repository software are:

- Windows 2012 R2 or Windows 2016 Server
- · 4 CPU
- · 8 GB RAM
- 40 GB storage space

Do the following to install **WMS-Repo** software:

- 1 Download **WMS_Repo.exe** file from Dell Digital Locker.
- 2 Log in as Administrator, and install WMS_Repo.exe on the repository server.
- 3 Click **Next** based on the following screens displayed to complete the installation.

Dell WMS Repository 1.1				
Wyse Management Suite Repository Installer _ X				
Welcome	Welcome to Dell Wyse Management Suite Repository			
Destination	This wizard guides you through the complete installation of Dell Wyse Management Suite Repository 1.1 on your system.			
	By installing or using this product, you agree to the following: Dell End User License Agreement			
	Important Notice Please make sure that your thin client devices have the correct version of the Wyse Device Agent to communicate with the WMS Cloud.			
	Next			

Figure 10. Welcome message

Dell WMS Repository 1.1				
🖦 Wyse Managen	nent Suite Repository Installer	_ ×		
✓ Welcome	Destination			
Destination	Select a destination where you want to install Dell Wyse Manager Repository	nent Suite		
Install	C:\Program Files\DELL\WMSRepository	Browse		
	Back	Next		

Figure 11. Destination folder detail

Dell WMS Repository 1.1					
🖦 Wyse Managen	nent Suite Repository Installer	-			
✓ Welcome	Installation Completed				
 Destination 					
✓ Install					
	The installation was s	uccessful.			

Figure 12. Installation complete

4 Click **Launch** to launch the **WMS Repository registration** screen on the web browser. This may take a few minutes for the web server start before you start the browser.

	= 0 ×
(-) (-) (-) (-) (-) (-) (-) (-) (-) (-)	
Wyse Management Suite Repository	<u>^</u>
Wyse Management Suite Repository	
Registration	
Register to Public WMS Management Portal	
WMS Management Portal	
https:// <fqdn>:<port>/ccm-web</port></fqdn>	
Validate server certificate authority	
MOTT Server URL	
Note: This field is only required when registering to WMS Server version 1.0. Later versions automatically retrieve mgft ud from the server.	
WMS Repository URL	
https://vnskng22.wyselab.com:443/wms-repo	
Change Repository URL?	
Admin Manna	
Admin Name	
Admin Password	
Repository Location	
Version: 1.1.0-39185	
Register	

Figure 13. Repository detail

5 Click **Register** to start the registration. Select the **Register to public WMS Management Portal** if you are registering on the public cloud.

(-) () () Maga://miking22.e., () ~ () () () () () () () () () () () () ()	
Wyse Management Sate Repository	^
Wyse Management Suite Repository	
Registration	
Register to Public WMS Management Portal	
WMS Server Mips //us1 wysemanagementisulle com/com web	
WMS Repository URL	
https://vnskng22.wyselab.com:443/wms-repo Change Reportery URL?	
Admin Name	
Admin Password	
Repository Location	
Version: 1.1.0-39185	
Register	
Server SSL Certificates: Enabled SSL Certificate Guide	
Current Certificate Issued for writing22 wyselib com Issued fore: writing22 wyselib com Valid for: November 11, 2117	~

Figure 14. Register on a public cloud

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6 Enter the following details, and press **Register**.

- a Wyse Management Suite server URL
- b MQTT Server URL is optional unless you register with Wyse Management Suite v1.0
- c WMS Repository URL (update the URL with the domain name)
- d Wyse Management Suite administrator login username information
- e yse Management Suite administrator login password information
- f Repository path information

O Majaci / Hosting 22 m. 2 × 8 C O Wyse Management Suite R. ×	- 0 X
Wyse Meragement Sule Reportery	^
Wyse Management Suite Repository	
Registration	
Register to Public WMS Management Portal	
Whits Management Partal	
https://www.ing21.wyselab.com/ccm-web	
Validate server certificate authority O	
MQTT Server URL	
Note: This field is only required whon registering to WMS Server version 1.8 Later versions automatically relative regit of from the server.	
Whits Repository URL	
https://www.https.com.443/wms.repo	
Charge Repository URL?	
Admin Name	
skijdeli com	
Admin Password	
•••••	
Repository Location	
C.wreepd X	
Verset 118-39105	
Register	
	- v

Figure 15. Registration details

7 If the registration is successful, the following window is displayed.

G 00	Maga //wedrog22.wc. (P = 18-6) St Wyor Management Solite R., X	
\sim	Wyse Management Suite Repository	î
	Wyse Management Suite Repository	
	Registration	
	WMS Management Portal	
	https://vnsking21.wyselab.com/443/ccm-web	
	WMS Repository URL	
	https://vinsking22:wyselab.com/443/wms-repo	
	MOIT Server	
	tcp.//vmskng21.wyselab.com: 1883	
	Repository Location	
	C/wmsrepo	
	Version: 1.1.6-39185	
	Unregister	

Figure 16. Successful registration

8 The following screen on the Wyse Management Suite portal confirms the successful registration of the remote repository.

lashboard Gr	oups & Config	s	Devices	Apps & Data	Rules	Jobs	Events	Us	ers	Portal Administration
ortal Administra	ition — File	Repo	sitories							
onsole Settings) > User in	nstructio	ms							
Active Directory (AD)	Sync F	les		Unregister	Edit	Delete				
Alert Classification		Active	Name/URL		Las	t Check-in	Version	Files	Notes	Others
External App Services		۲	Local reposit C:\WMS\Loc	iory - vnskng21 alRepo		N/A	N/A	50		Concurrent File Downloads: 5 Wake on LAN: Yes Fast File Upload & Download (HTTP): No Certificate Validation: No
Other Settings Thin Clients	F	۲	WMS Repo- https://vnskn	vnskng22 g22.wyselab.com:443	3 m	iinutes ago	1.1.0	40		Concurrent File Downloads: 5 Wake on LAN: Yes Fast File Upload & Download (HTTP): No Certificate Validation: No
Two-Factor Authentication										Continuent Failudeon, Ho
Reports										

Figure 17. Successful registration on WyseManagement Suite portal

9 HTTPS is by default enabled with **WMS_Repo.exe**, and gets installed with the self-signed certificate. To install your own domain specific certificate, scroll down the registration page to upload the SSL certificates, as displayed in the following window.

	- • ×
C C C Attps://wskng22.w., D * A C O Wyse Management Suite Re., X O Wyse Management Suite	n 🖈 🛱
	^
V Server SSL Certificates: Enabled SSL Certificate Guide	
Current Certificate	
Issued to: vrssing22.wyselab.com Issued from: vrssing22.wyselab.com Valid to: November 11, 2117	
PKCS-12 Key/Certificate Pair	
Upload HTTPS PKCS-12 (,pfx, .p12). Apache intermediate certificate is needed for IIS pfx.	
PKCS-12 file	
wyselab.com.pfx Browse	
Password for PKCS file	
•••••••	
Intermediate certificate	
_wyselab_com_intermediate.crt Browse	
Upload	

Figure 18. Uploading the certificate

10 The server restarts and the uploaded certificate is displayed as shown in the following window.

	_ D X
C 🛞 🔁 https://vnskng22.w., D = 🔒 C 🚭 Wyse Management Suite Re × 😂 Wyse Management Suite	♠ ★ Ø
	^
Server SSL Certificates: Enabled SSL Certificate Guide Gurgert Certificate	
Issued to: ".wysetab.com Issued from:: RapidS&L SHA256/CA - G3 Valid to: June 6, 2018	
PKCS-12 Key/Certificate Pair	
Upload HTTPS PKCS-12 (.pfx, .p12). Apache intermediate certificate is needed for IIS pfx.	
PKCS-12 file Browse	
Password for PKCS file	- 1
Intermediate certificate () Browse	
Upload	
opida	

Figure 19. SSL Certificate enabled

11 If the Wyse Management Suite is enabled with self-signed or a private domain certificate, you can upload the certificate on the Wyse Management Suite repository server to validate the Wyse Management Suite CA credentials, as displayed in the following window.

	_ 0 X
🗲 💮 🥘 https://vnskng22.w., 🔎 = 🚔 🖒 🤤 Wyse Management Suite Re., × 🖨 Wyse Management Suite	
	~
✓ Trust Store Certificates	
Trust store location: C:\Program Files/DELL\WMSRepository\jdk1.8.0_112\jre\libisecurity\cacerts	
Uploaded Certificate Alias Names: None	
Upload WMS Server certificate to trust store (CER format)	
Certificate	
Browse	
Upload	
	_
	~
Renne & Annelline Belanne Beller About Abbell Date	English (119), V

Figure 20. Trust store certificate

12 Navigate to the C:\wmsrepo location that you entered during registration, and you can see that the Wyse Management Suite repository server has created several folders where all the repository files will be saved and managed.

🛯 🗋 🚺 = 1					repository
File Home Sha	re View				
€ 💿 ▾ ተ 퉫 ו	This PC + Local Disk (C:) + wmsrepo	repository			
🔆 Favorites	Name	Date modified	Туре	Size	
Desktop	🐌 imagePull	12/5/2017 4:50 PM	File folder		
🚺 Downloads	鷆 iotGatewayApps	12/5/2017 4:50 PM	File folder		
💹 Recent places	퉬 osimages	12/5/2017 4:50 PM	File folder		
	퉬 rspPackages	12/5/2017 4:50 PM	File folder		
👰 This PC	softwareTcApps	12/5/2017 4:50 PM	File folder		
隆 Desktop	🎉 thinClientApps	12/5/2017 4:50 PM	File folder		
Documents					

Figure 21. Repository folder

Managing Wyse Management Suite repository service

Wyse Management Suite repository is displayed as **Dell WMS Repository: Tomcat Service** in Windows Local Services window and is configured to start automatically when the server restarts. The service can be restarted as shown in the following window.

9	Services					
File Action View	Help					
(+ +) 🗊 🗑	Q 📑 🛛 🖬 🕨 🔳 🕪					
Services (Local)	Services (Local)					
	Dell WMS Repository: Tomcat Service	Name ¹	Description	Status	Startup Type	L
		DCOM Server Process Launcher	The DCOM	Running	Automatic	L
		😪 Dell WMS Repository: Tomcat Service	Apache To	Running	Automatic	L
		Device Association Service	Enables pair		Manual (Trig	L
	Restart the service	🔍 Device Install Service	Enables a c		Manual (Trig	L
		A	P 11 11		1.	

Custom port configurations

Wyse Management Suite v1.1 uses the following port as the default port for the applications that is installed.

- · Apache Tomcat: 443
- MariaDB database: 3306
- · Mongo database: 27017
- · MQTT Broker: 1883
- Memcached: 11211
- 1 To use a non-default port for one or more of the above services, use **Custom** install option during Wyse Management Suite installation, the option listed in the following screen allows you to use the local database for MongoDB and MariaDB or use the remotely installed database.
- 2 The following set of screens allows you to change the default ports used by the installer during installation.

Topics:

- Changing the port after Wyse Management Suite installation
- Changing MQTT port
- Changing MariaDB port
- · Changing the MongoDB database port

Changing the port after Wyse Management Suite installation

This section explains how to change the port after installing Wyse Management Suite. Changing the ports after installation would be to uninstall Wyse Management Suite and reinstall using Custom installation mode to change ports. If re-installation is not an option, the following sections explains the procedure to change the ports manually. To change the Tomcat service port, do the following:

1 Stop Tomcat service. The entry is identified by **Dell WMS: Tomcat Service**.

- 2 Edit the file C:\Program Files\Dell\WMS\Tomcat-8\conf\server.xml in a text editor.
- 3 Find and replace all occurrences of port entry 443 with the port number you need to use. It is optional to change the references to port 8443.
- 4 Save the **server.xml** file and exit.
- 5 Start the Tomcat service.
- 6 You must enter the port number in the URL (default port 443 can be omitted from the URL), For example, https:// xyz.wysemanagementsuite.com:553/ccm-web. The port specified in the URL should be used for both portal access and for device registration.

Changing Memcached port

The Memcached port can be changed during Wyse Management Suite v1.1 installation. You must uninstall and reinstall to create a new Memcached service. Dell recommends not to change the Memcached port detail after installation.

Changing MQTT port

- 1 Stop the Tomcat and MQTT services.
- 2 Configure Mosquitto to change the port based on the following steps.
 - a Edit the file C:\Program Files\Dell\WMS\Mosquitto\mosquitto.conf in a text editor.
 - b Note the following entries:
 - # Port to use for the default listener

#port 1883

- c Uncomment the port 1883 entry and change the port number to your preferred port. For example, port 2883.
- d Save the file, and start the MQTT service.
- e Check the following entry to confirm that the MQTT service is running on the new port.

ps> get-nettcpconnection -LocalPort 2883

- 3 To configure Tomcat, do the following.
 - a Open a command prompt session, and navigate to cd C:\Program Files\DELL\WMS\MongoDB\bin.
 - b Run the following command at the command prompt.

>mongo stratus -u stratus -p <mongodbPassword> -eval "db.bootstrapProperties.update({'name': ' mqtt.server.url'}, {'name': ' mqtt.server.url' , 'value' : 'tcp://xyz-pns.wysemanagementsuite.com:2883', 'isActive' : 'true', 'committed' : 'true', {upsert:true})"

c Start Tomcat Service identified in Local Services as Dell WMS: Tomcat Service and re-register all the devices, so that the MQTT URL is referring to the new port.

Changing MariaDB port

This section explains how to change the MariaDB port.

- 1 Start the Tomcat service and stop the MariaDB service. To configure the MariaDB, do the following:
 - a Edit the file C:\Program Files\Dell\WMS\Database\SQL\my.ini in a text editor.
 - b Change the port number for both mysqld and client to your preferred port. The port numbers should be of the same value. For example,

[mysqld]

datadir=C:/Program Files/DELL/WMS/Database/SQL

port=3308

[client]

port=3308

- c Save the file, and start the MariaDB service.
- 2 To configure Tomcat, do the following.
 - a Edit the file C:\Program Files\Dell\WMS\Tomcat-8\webapps\ccm-web\WEB-INF\classes\bootstrap.properties in a text editor.
 b Update the properties in the file with your preferred port number details. For example,
 - jpa.connection.url=jdbc\:mysql\://localhost\:3308/stratus?useUnicode\=true&characterEncoding \=utf-8&useLegacyDatetimeCode\=false&serverTimezone\=America/Los_Angeles

jpa.connection.port=3308

c Save the file, and start the Tomcat service. Verifiy that the services are running on the configured port. For example,

Changing the MongoDB database port

This section explains how to change the MongoDB database port details

- 1 Stop the Tomcat and MongoDB services.
- 2 To configure the MongoDB port entry, do the following.
 - a Edit the file C:\Program Files\Dell\WMS\MongoDB\mongod.cfg in a text editor.
 - b Update the property in the file with your preferred port number. For example, port=27027.
 - c Save the file, and start the MongoDB service. Confirm that it is running on the new port.
- 3 To configure Tomcat, do the following.
 - a Edit the file C:\Program Files\Dell\WMS\Tomcat-8\webapps\ccm-web\WEB-INF\classes\bootstrap.properties in a text editor.
 - b Update the properties in the file with your preferred port number. For example, mongodb.seedList=localhost\:27027.
 - c Save the file, and start the Tomcat service. Verify that the service is running on the required port. For example. **ps>get-nettcpconnection –LocalPort 27027**.



This chapter explains about the backup details for the database..

Database backup

Stop Tomcat Service before taking a backup of the database. Tomcat Service is identified as "Dell WMS: Tomcat Service" and must be stopped from Local Services.

The following command will dump the contents of the MongoDB.

mongodump --host <mongodb_host> -u stratus -p <db_password> --db stratus --out "\wmsmongodump" The following command will dump the contents of the MarioDB.

mysqldump --routine -h<mariadb_host> -ustratus -p<db_password> stratus > ".\wmsdump.sql"

Database restore

Stop Tomcat Service before restoring the database. Tomcat Service is identified as "Dell WMS: Tomcat Service" and can be stopped from Local Services.

The following command will restore the MongoDB. You must run the following command from the **wmsmongodump** directory – parent directory of stratus database.

echo "db.dropDatabase()" | mongo -u stratus -p <db_password> --host <db_host> stratus mongorestore --host <db_host> -u stratus -p <db_password> --db stratus "\stratus"

The following command will restore the MarioDB. You must run the following command.

mysql –h<db_host> -ustratus –p<db_password> -e"drop database if exists stratus; show databases;"mysql –h<db_host> -ustratus – p<db_password> -e"create database stratus DEFAULT CHARACTER SET utf8 DEFAULT COLLATE utf8_unicode_ci;show databases;"mysql –h<db_host> -ustratus –p<db_password> stratus < .\wmsdump.sql