NMS7.5.1.0
Server and Client requirements and Installation
Part – 2

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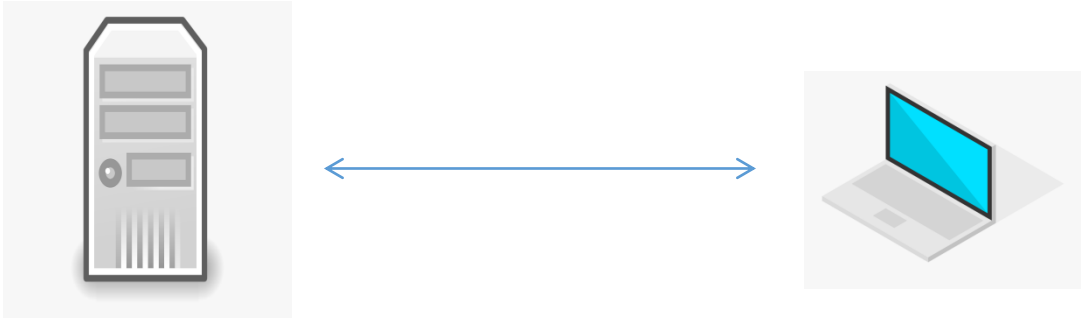
Introduction

- EMS and NMS are software's which have to be installed in server machine.
- It follows Server and Client mechanism. Once these softwares are installed in servers, these services are started and then from client machine the application is opened.
- These software cannot be installed is any system, there are certain specifications.
- For client any windows or Linux (PC or Laptop) can be used with few additional softwares.



Server
where EMS/NMS is installed

Client
PC or Laptop with Windows/LINUX OS

Server and Client requirements

Server requirements

Component		Specification
Hardware	Processor	64-bit Dual processor Quad Core Intel 3.0 GHz or higher (8 cores in total with Hyper Threading enabled)
Software	Operating System	RHEL server release 7.5 (Maipo) (64-bit)
	Webserver	Apache Tomcat - 8.0.30
	Messaging/JMS	Apache Active MQ - 5.13.0
	Platform	Java Development Kit 8 Update 171 (JDK 8u171)
	Database	MySQL Version 5.7.22 (64-bit)

Client requirements

Component		Specification
Hardware	Processor	Intel/AMD Quad core (3GHz)
	Memory	• 8 GB Physical Memory (RAM) • 40 GB Hard Disk Drive
	Client Configuration	19 inch TFT monitor supporting 1280x1024 or 1366 x 768 or 1920 × 1080 resolution with "true color" graphics card of same resolution.
Software	Platform	Java JRE 8 Update 171
	Operating System	Windows 10/ Red Hat Enterprise Linux 7.5

Note: The server hardware requirements depends on the application, installation mode and the number of NEQs that needs to be managed.

NEQs

- NEQs stands for Network Equivalents, it's a another gauge to measure capacity of the nodes.
- Higher the capacity higher the NEQ value.
- Every node which gets added to EMS has a defined NEQ value.
- The capacity of EMS as in how many nodes can be added is defined in terms of NEQ. This is defined in License.

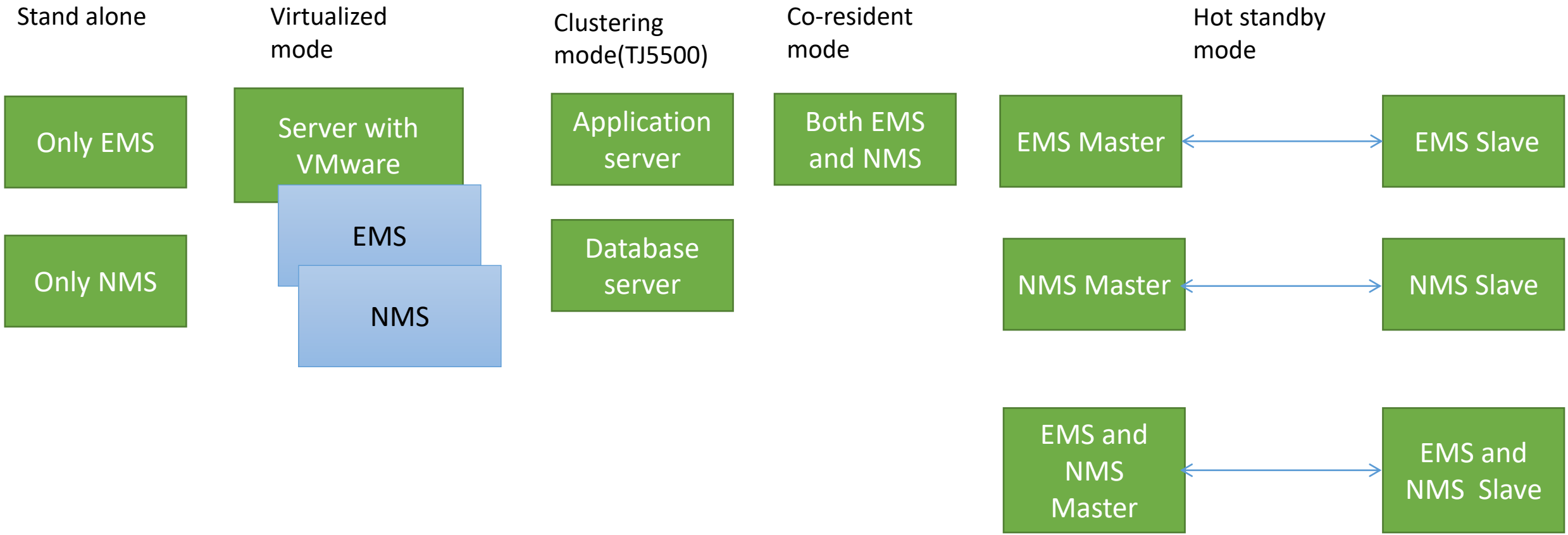
Product Code	Type	Weight	Number of Nodes	Total Weight
TJ1400_Type-7SR	TDM	2.50	1	2.50
TJ1400_Type-7SR-10/10G	TDM	10.00	1	10.00
TJ1400_Type-7SR-5SEP-10/10G	TDM	10.00	1	10.00
TJ1400_Type-7SR-5SEP-60/60G	TDM	40.00	1	40.00
TJ1400_Type-7SR-60/60G	TDM	40.00	1	40.00
TJ1600_MODEL_POTP-1Degree	WDM	6.00	1	6.00
TJ1600_MODEL_POTP-1Degree-OTN/DWDM	WDM	2.50	1	2.50
TJ1600_MODEL_POTP-320/20G-1Degree	WDM	29.00	1	29.00
TJ1600_MODEL_POTP-360G-1Degree-OTN/DWDI	WDM	9.00	2	18.00
TJ1600_MODEL_POTP-640G-1Degree-OTN/DWDI	WDM	16.00	2	32.00
CEF4C	Switch	32.00	1	32.00
CEF4	Switch	32.00	1	32.00

Installation Modes

- **Standalone Mode:** In Standalone mode, you can have only one instance of TJ5100/TJ5500 running on one physical server. Either you have EMS or NMS installed.
- **Virtualized Mode:** In Virtualization mode using VMware ESX Server, you can install more than one instance of TJ5100/TJ5500 on a physical server. This mode supports virtualization of RAM, HDD/RAID, and CPU cores in one physical server into multiple virtual servers. Using this technology, you can run different server applications such as TJ5100, TJ5500, or any other third party software on a single physical server as though they are independent
- **Clustering Mode (only for TJ5500):** In the Clustering mode, you can scale up the management capabilities of a TJ5500 beyond 30,000 NEQs up to 60,000 NEQs. In clustering mode, two physical servers work as one logical server. One physical server is used to run the database and the other physical server is used to run the application. Database and Application servers are components of the TJ5500.
- **Co-Residency Mode:** Both EMS and NMS installed in one server.
- **Hot Standby Modes:** In Hot Standby Mode, you can replicate an active TJ5500/TJ5100 system for redundancy purpose. Active server is called Master and other server is called slave.

Installation Modes

Note: Each green box represents physical server



Server hardware requirements based on NEQs and Installation modes

Stand alone

Maximum Number of NEQs	TJ5500/TJ5100 Supported	Minimum CPU Cores Required	Minimum RAM Required	Minimum Disk Space Required
6000	One TJ5100 only	8	32 GB	2*600 GB HDD in RAID1
15000	One TJ5500 only	16	32 GB	2*600 GB HDD in RAID1
30000	One TJ5500 only	32	64 GB	2*600 GB HDD in RAID1

Clustering mode(TJ5500)

Maximum Number of NEQs	TJ5500/ TJ5100 Instances Supported	Server in Clustering Mode	Minimum CPU Cores Required	Minimum RAM Required	Minimum Disk Space Required	Minimum NIC Cards Required
60,000	One TJ5500 Instance	Application Server	32 GB	64 GB	2*600 GB HDD in RAID1/Server	1 per Server
		Database Server	16 GB	64 GB	2*600 GB HDD in RAID1/Server	1 per Server

Virtualized mode

Maximum Number of NEQs	TJ5500/ TJ5100 Instances Supported	Cores per Server	RAM per Server	Disk Space per Server	Sockets per Processor	Minimum NIC Cards Required
6000 per TJ5100	Two TJ5100	8	64GB + 4GB for VMWare	4* 600GB HDD in RAID1	2	2
6000 per TJ5100 and 15000 per TJ5500	Four TJ5100 (or) Two TJ5100 + One TJ5100	32	128GB + 8 GB	8* 600GB HDD in RAID1	4	4

NOTE: Additional 2 GB RAM will be required per VMware instance.

Dedicated NIC card is required for each VM instance.

Server hardware requirements based on NEQs and Installation modes

Co-resident mode

Maximum Number of NEQs	TJ5500/ TJ5100 Instances Supported	Minimum CPU Cores Required	Minimum RAM Required	Minimum Disk Space Required	Minimum NIC Cards Required
1000	One TJ5100 and One TJ5500	8	32 GB	2*600GB HDD in RAID1	1

Note: Refer to NMS Installation guide for further details
http://192.168.0.15/cgi-bin/viewvc.cgi/*checkout*/User%20Manuals/Tejas%20Products/TJ5500-NMS/NMS%20R7.5/NMS%20R7.5.1.0/TJ5500%20R7.5.1.0%20Installation%20and%20Commissioning%20Guide.pdf?revision=1.5&root=Docs

Software Installation Package

- You will find below mentioned files in installation package.
- Dependent software will have all the required softwares to run EMS and NMS application.
- User has to run 'install_all.sh' script. This script will go to Dependent software and install required software and then installs EMS and NMS.
- After successful installation, License will be placed for

EMS and NMS. License will be shared based on the Purchase.

- After adding License, Start the EMS and NMS service.

Note: Refer to NMS Installation guide for installation steps. RAS installation steps are also covered in the guide, http://192.168.0.15/cgi-bin/viewvc.cgi/*checkout*/User%20Manuals/Tejas%20Products/TJ5500-NMS/NMS%20R7.5/NMS%20R7.5.1.0/TJ5500%20R7.5.1.0%20Installation%20and%20Commissioning%20Guide.pdf?revision=1.5&root=Docs

Software installation package

Software	Details
DependentSoftware.tgz	The basic softwares required for running TJ5500 application. This includes Java 1.8u171, MySQL 5.7.22, Active MQ 5.13.0 and Apache Tomcat 8.0.30.
install_all.sh	The installation script to initiate the installation.
NMS_Release_<release version>.tgz	The TJ5500 software build.
EMS_Release_<release version>.tgz	The TJ5100 software build.
RAS_Release_<release version>.tar.gz	The RADIUS Administration Service (RAS) software build.
TejNMS_Client_<release version>.exe	The executable file for client desktop application.
TejNMS_Webswing_Setup_<release version>.exe	The setup file user must install in the client system before launching the TJ5500 web application.

License for EMS and NMS

- License will determine how many nodes can be added, NEQ value will be mentioned in the license.
- License will also have information on certain features supported by NMS, Like Radius or Hot standby mode. These features has to be enabled in the License only then User will be allowed to used.
- EMS License will be placed in the path /opt/ems/release/license
- NMS License will be placed in /opt/nms/release/license/

Client Configuration

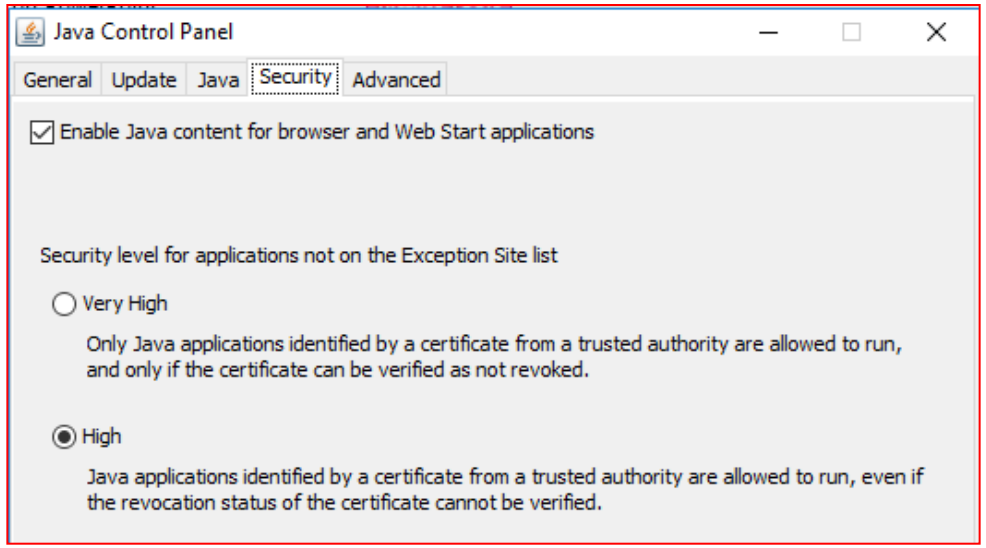
- Previous versions of NMS were dependent on Browser but NMS7.5 has specific client application where NMS can be laughed. No more dependency on browser.
- The last two files from the software package is for client.
- NMS7.5 works on JAVA Webswing, respective webswing

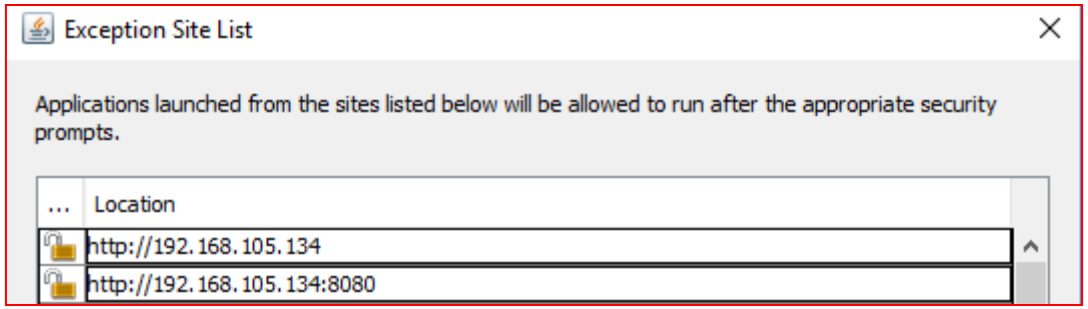
Is needed.

- Install Client Application and webswing.
- From Control panel, open java and set security to High.
- Add JAVA exception i.e., Add NMS and EMS IP to the

exception list.

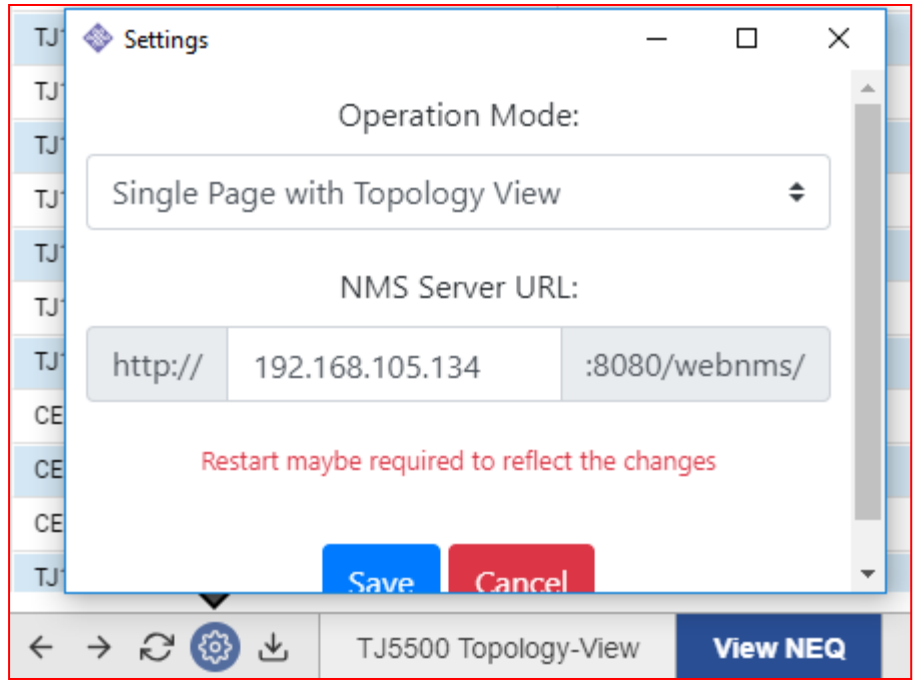
TejNMS_Client_<release version>.exe	The executable file for client desktop application.
TejNMS_Webswing_Setup_<release version>.exe	The setup file user must install in the client system before launching the TJ5500 web application.





Client Configuration

- Start the webswing
- Launch the NMS Client Application by double clicking on the ICON.
- Click on settings and type the NMS server IP and then Save.
- Enter the Username and Password for NMS and NMS UI will open.



Note: Refer to NMS Installation guides for further details
http://192.168.0.15/cgi-bin/viewvc.cgi/*checkout*/User%20Manuals/Tejas%20Products/TJ5500-NMS/NMS%20R7.5/NMS%20R7.5.1.0/TJ5500%20R7.5.1.0%20Installation%20and%20Commissioning%20Guide.pdf?revision=1.5&root=Docs

Thank you