iSIM Installation

Document Number: RD_SS_21

Dec 03, 2020

Prepared By:

Aldemir Akpinar

Version	Date	Change Author	Reviewed by	Change Summary
0.1	03.03.2020	Aldemir Akpinar	Caglar Oral	Initial Release
0.2	29.04.2020	Caglar Oral	Mustafa Güvenç	Topology diagram added
0.3	16.07.2020	Mustafa Güvenç	Aldemir Akpınar Çağlar Oral Onur Toksa	Hardware requirements updated Header format updated
0.4	16.07.2020	Aldemir Akpinar		Network requirements and windows version changed
0.5	03.12.2020	Aldemir Akpinar		Server count changed

Table of Contents

1 Introduction

This document is intended to provide installation guideline for iSIM Installation.

1.1 Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this specification are to be interpreted as described in IETF RFC2119.

2 Server Preparation

There are three kinds of ISOs that will be provided to the IT department. Provided ISO will automatically boot the system and will format/partition and install the system accordingly. The installation system will only ask for IP Address and hostname details. This is done so that, ISOs can be installed to a physical or a virtual server.

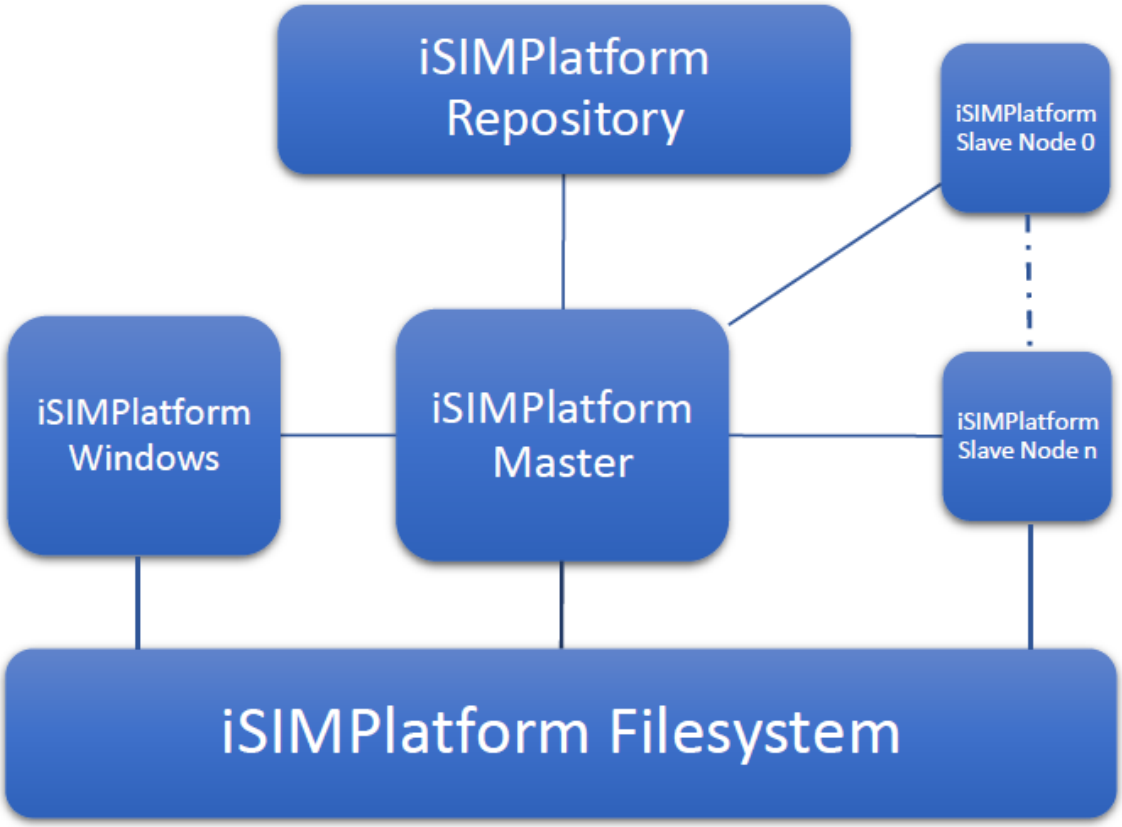
These ISOs are called:

- iSIM k8s cluster ISO
- iSIM Storage ISO
- iSIM Repository ISO
- iSIM Windows ISO

2.1 Requirements

iSIM Software Entities VM Requirements (Original)						
	Operating System	**COMPONENTS**	**CPU Core**	**RAM**	**HDD**	**# of entities**
1	Windows Server 2019	iSIMPlatform K8s Windows	8 Core	32GB	200GB	1
2	iSIMPlatform Linux	iSIMPlatform K8s File System	4 Core	8GB	100GB	1
4	iSIMPlatform Linux	iSIMPlatform K8s Repository	4 Core	8GB	200GB	1
5	iSIMPlatform Linux	iSIMPlatform K8s Master	4 Core	8GB	100GB	1
6	iSIMPlatform Linux	iSIMPlatform K8s Slave	8 Core	64GB	100GB	4
Network Requirements						
1	Minumum /27 Subnet IP Pool required. /26 Subnet IP Pool is Nice to Have.					
2	Port 80 and; Ports between 10000-10200 should be available.					
3	Two FQDN records pointing to an IP in the IP Pool. One of them should be a wildcard of the parent (other) domain. For example: **myinstallation.isim.myinternal.net** ***.myinstallation.isim.myinternal.net** All clients will access the system and its components from these domains.					

2.2 Installation Topology



iSIMPlatform Installation Topology Diagram

2.3 Server Preparation

First ISO will be used to install main cluster servers and will be used to install more than one server. Storage ISO is used to keep the shared data of iSIM, e.g. databases, static data. Because iSIM is based on Kubernetes (will be called K8s from now on) technology, and K8s is based on Docker which is a stateless server environment, we need to have a common shared storage. Hence Storage ISO is used to install that environment with storage specifications defined according to customer needs/installation set. iSIM Repository ISO is used to install a private Docker registry unless k8s server can access to Proline infrastructure.

Once servers are installed and unique hostname and IP addresses are added, field application engineer (will be call FAE from now on) will be ready to proceed to cluster preparation and creation.

3 K8s Cluster Preparation & Setup

FAE will need to access the servers from his personal laptop (or from his previously prepared installation environment) via SSH. Afterwards he'll use ansible to automatically setup k8s, and install iSIM.

FAE will run create_cluster.sh script. This script will first, create the master node. Then it will add slave nodes to master, and then it will connect the storage server to the k8s cluster so that every persistent volume request will be automatically provisioned from the storage server. After this step, ansible will copy all the locally stored to Docker images to the registry server and will start registry services.

When all iSIM Linux services are finished. FAE will run another ansible playbook to setup Windows services and copy necessary iSIM services.

When these steps are finished FAE will be ready to proceed to iSIM installation.

4 iSIM Installation.

For this step FAE will be deploying the specified iSIM release on the server. This is as simple as running an installation script which will eventually instruct k8s to pull specific images from the local Docker registry and run with specified parameters. This script will also install iSIM software on the windows server after enabling needed features.

After all installation is finished, FAE will connect to the web client to finalize the installation from his web browser.