Qognify

SITUATOR

Qognify Situator

System Requirements Guide

March 2023

Version 9.1

Rev. 00

Contents

Revision History

Revision	Purpose for Change	Date
00	Version 9.1	March 2023

CHAPTER 1 About This Guide

Situator is a platform for mission-critical incident management and actionable business intelligence. Using a client-server architecture, Situator can handle significant loads of data and triggers from a large variety of third-party systems and sensors.

Situator can be deployed in various topologies, including load-balancing clustered environments.

This document describes the system requirements for each component of the Situator system.

The information and procedures described in this document are for use by Qognify personnel or system administrators qualified to install and use Situator.

Use this document's information and requirements as a basic guideline for a typical Situator deployment and analyze the system requirements per project case by case.

All Situator documents are available on the The Q (the Qognify Partner Portal).

CHAPTER 2 Server Machines

This section details hardware and software server machine prerequisites.

2.1 Situator Server Hardware Requirements

The table below details the minimum hardware requirements for each server (physical or virtual) of Situator.

Server Type	Requirement
Web API Server	» 2 x Intel Xeon 6 core w\ HT 2.00GHz » 8 x 8 GB RDIMM, 1333 MHz, Low Volt, Single Rank = 64GB Total » Storage (shared redundant storage required): » 200 GB OS Partition (minimum) » 200 GB Application Partition (minimum) » RAID protection recommended » 2*1 GB Network adapter (network redundancy recommended) » Dual, Hot-plug, Redundant Power Supply (1+1) are recommended
Application Server	» 2 x Intel Xeon 6 core w\ HT 2.00GHz » 4 x 8 GB RDIMM, 1333 MHz, Low Volt, Single Rank = 32GB Total » Storage (shared redundant storage required): » 200 GB OS Partition (minimum) » 200 GB Application Partition (minimum) » RAID protection recommended » 2*1 GB Network adapter (network redundancy recommended) » Dual, Hot-plug, Redundant Power Supply (1+1) are recommended

Server Type	Requirement
ARE Server	» 2 x Intel Xeon 6 core w\ HT 2.00GHz » 4 x 8 GB RDIMM, 1333 MHz, Low Volt, Single Rank = 32GB Total » Storage (shared redundant storage required): » 200 GB OS Partition (minimum) » 200 GB Application Partition (minimum) » RAID protection recommended » 2*1 GB Network adapter (network redundancy recommended) » Dual, Hot-plug, Redundant Power Supply (1+1) are recommended
OIC Server	» 2 x Intel Xeon 6 core w\ HT 2.00GHz » 8 x 8 GB RDIMM, 1333 MHz, Low Volt, Single Rank = 64GB Total » Storage (shared redundant storage required): » 200 GB OS Partition (minimum) » 200 GB Application Partition (minimum) » RAID protection recommended » 2*1 GB Network adapter (network redundancy recommended) » Dual, Hot-plug, Redundant Power Supply (1+1) are recommended

Server Type	Requirement
Components Server	» 2 x Intel Xeon 6 core w\ HT 2.00GHz » 4 x 8 GB RDIMM, 1333 MHz, Low Volt, Single Rank = 32GB Total » Storage (shared redundant storage required): » 200 GB OS Partition (minimum) » 200 GB Application Partition (minimum) » RAID protection recommended » 2*1 GB Network adapter (network redundancy recommended) » Dual, Hot-plug, Redundant Power Supply (1+1) are recommended
SQL Database Server (for a separate SQL server machine)	» 2 x Intel Xeon 6 core w\ HT 2.00GHz » 4 x 8 GB RDIMM, 1333 MHz, Low Volt, Single Rank = 32GB Total » Storage (shared redundant storage required): » 200 GB OS Partition (minimum) » 500 GB SQL Partition (minimum) » 2*1 GB Network adapter (network redundancy recommended) » Dual, Hot-plug, Redundant Power Supply (1+1) are recommended

Server Type	Requirement

Gateway Host Server	» 2 x Intel Xeon 6 core w\ HT 2.00GHz
	» 4 x 8GB RDIMM, 1333 MHz, Low Volt, Single Rank = 32GB Total
	» Storage (shared redundant storage required):
	  » 200 GB OS Partition (minimum)
	  » 200 GB Application Partition (minimum)
	  » RAID protection recommended
	» 2*1GB Network adapter (network redundancy recommended)
	» Dual, Hot-plug, Redundant Power Supply (1+1) are recommended

The minimum requirement is a single server on which all server components are installed.

A large-scale, fully redundant installation will require 2–3 clusters. For more information, refer to the *High Availability and Disaster Recovery Setup* section in the *Situator Installation and Upgrade Guide*.

Contact your Qognify representative regarding the specific configuration needed to support the external systems that are used in your implementation.

2.2 Situator Server Software Requirements

The following software and relevant licenses must be both configured and active before the Situator database and server applications can be loaded:

Server Type	Requirements
Application Server	» Microsoft Windows Server 2016, 2019 (64-bit Standard or Datacenter edition) » Latest Microsoft Windows update » IIS - in case IDM is installed on this server
Web API Server	» Microsoft Windows Server 2016, 2019 (64-bit Standard or Datacenter edition) » Latest Microsoft Cumulative Time Zone update » IIS
ARE Server	» Microsoft Windows Server 2016, 2019 (64-bit Standard or Datacenter edition) » Latest Microsoft Cumulative Time Zone update
OIC Server	» Microsoft Windows Server 2016, 2019 (64-bit Standard or Datacenter edition) » Latest Microsoft Cumulative Time Zone update
Components Server	» Microsoft Windows Server2016, 2019 (64-bit Standard or Datacenter edition) » (Only if IDM is installed on this server) Microsoft .NET Framework Runtime Version 4.5 (4.5.2), 4.6 (4.6.1 or 4.6.2) or 4.7 » Latest Microsoft Cumulative Time Zone update » IIS - in case IDM is installed on this server (this is the default)
SQL Database Server (for a separate SQL server machine)	» Microsoft SQL Server 2016, Standard or Enterprise edition, 2017 Enterprise edition, or 2019 Enterprise edition - including SSIS components » Filestream enabled. Refer to Microsoft website. » Named Pipes enabled. Refer to Microsoft website. NOTE: The SQL license is not included
Gateway Host Server	» Microsoft Windows Server 2016, 2019 (64-bit Standard or Datacenter edition) » Latest Microsoft Cumulative Time Zone update

NOTE: Situator must be installed on an English-language supported operating system.

NOTE: Client and Server machine times should be synchronized using Windows Time service or another time synchronization software.

CHAPTER 3 Client Workstations

Situator supports multiple concurrent client workstations. This architecture provides the security operations with the flexibility to install Situator client workstations anywhere within the enterprise.

3.1 Situator Client Hardware Requirements

The table below details a typical hardware configuration for a user's desktop.

Component	Requirement
CPU	Intel Core I5-13500 or Core I7-12700 or higher[1]
Memory	16 GB RAM minimum
Hard disk	256 GB Solid State Drive (PCIe recommended) 40 GB of free space on the hard drive
Display	At least one 22" or larger monitor is required, two monitors or more are recommended. Each monitor should support a minimal resolution of 1280 x 1024 pixels.
Display Adapter	An OpenGL 2.1 compliant PCI Express x16 video adapter with a minimum of 1024 MB RAM, by NVIDIA or AMD. Support for 4 - 8 active video output Alternatively, it is possible to install two identical display adapters, each supporting 2 active video outputs - as long both adapters are the same make and model and conform to the above specifications. Recommended card for 2D: NVIDIA RTX T600 or AMD Radeon™ Pro WX5100 NOTE: NVIDIA video cards are recommended for optimal display with ESRI ArcGIS
Network Adapter	Gigabit Ethernet adapter
Other	Keyboard and mouse, or compatible pointing device

[1]You can review the CPU performance using the www.cpubenchmark.net

3.2 Situator Client Software Requirements

The following software licenses must be both configured and active before the Situator client applications can be loaded:

- Microsoft Windows 10.0 Professional 64-bit

  NOTE: Windows 10 configuration:
  When using Windows 10, an attachment will not open in Control Room, unless a default application has been defined for the file type. From the local computer (not from within the Control Room application) right-click either the attachment or a file having the same extension as the attachment, and select **Open with**, and set a default program. You can change a default program anytime.

- Latest Microsoft Cumulative Time Zone update

  Client and server machine times should be synchronized using Windows Time service or a different time synchronization software. Not synchronizing the times may result in operational problems, such as time differentials in PTZ lock administration.

- If one of the following GIS solutions is purchased/used with your Situator license, it needs to be installed and activated using one of the following vendor provided licenses:
  - ESRI ArcGIS Runtime Engine v10 SP4
  - ESRI ArcGIS 10.2 Runtime for WPF
  - ESRI ArcGIS Runtime v100.15
- Non-English support - An Operating System (OS) with foreign language must be installed as a Multilingual User Interface add-on, on top of an English OS. It is not possible to install Situator Client on a non-English OS.

3.3 Displaying Streaming Video in Workstations

Workstations that display streaming video must comply with more stringent video vendor specifications than specified in the Display Adapter component in Situator Client Software Requirements on the previous page. Display adapters must comply with video vendor specifications as they have a significant effect on reducing workstation machine CPU utilization. The CPU and Memory components should also be sized according to the video vendor specifications if they exceed the specifications in this document.

Contact your Situator representative regarding the specific configuration per the external video systems that are used in your implementation.

CHAPTER 4 Network Connectivity

The network connectivity requirements are:

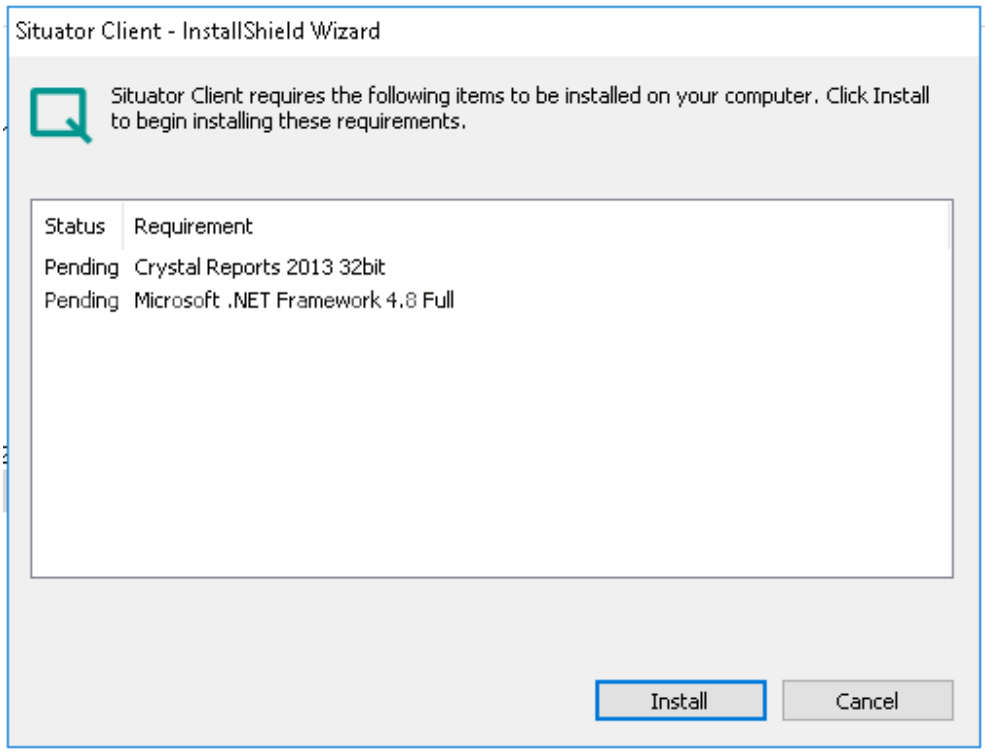
Item	Requirement
Database	Accessible to Client and Server stations via standard TCP/IP Ethernet network
Client workstations	Able to communicate with the Server using TLS 1.2, HTTP and HTTPS
Client workstations and Server	Have two-way communication open on configurable ports Have LAN Gigabit connectivity
Browser based applications	Able to communicate using TLS 1.2, HTTP and HTTPS
Internet Protocol version (IP)	Situator supports IPv4 only
Internet Control Message Protocol (ICMP)	ICMP protocol should be allowed on Firewall across all Situator components

CHAPTER 4 Auto-installed Prerequisites

During Situator installation, if prerequisite components are missing (for example, .Net Framework), they will be automatically installed when you confirm the installation (i.e. click **Install**).

Prerequisite components are displayed in the various *InstallShield Wizard* windows only if they need to be installed.

For example, in *Situator Client InstallShield Wizard*:



The following table lists the various prerequisites that may be installed on your computer during installation, if missing:

Situator Installer	Prerequisite	Comments
Server	Microsoft .NET Framework 4.8 Full	Not installed if newer .Net version exists
	Microsoft OLE DB Driver for SQL Server	For connecting to SQL Server
Client	Microsoft .NET Framework 4.8 Full	
	Crystal Reports 2013 32bit	Needed for the Reporting Tool
	Microsoft OLE DB Driver for SQL Server	
Components	Microsoft .NET Framework 4.8 Full	
	IISCORSModule	For IDM passive mode
	vcredist 2015-2019 x64	For Erlang (additional 3rd party softwares that the Components installer is installing (together with Rabbit and Couchbase).
	Microsoft OLE DB Driver for SQL Server	
Logbook	Microsoft .NET Framework 4.8 Full	
OIC	Microsoft OLE DB Driver for SQL Server	
ARE	Microsoft .NET Framework 4.8 Full	
	Microsoft OLE DB Driver for SQL Server	
Gateways Host	Microsoft .NET Framework 4.8 Full	
WebAPI	Microsoft .NET Framework 4.8 Full	
	URLRewrite2.1	Installed only if Forms Proxy selected
	ApplicationRequestRouting3.0	Installed only if Forms Proxy selected
Web Client	URLRewrite2.1	

CHAPTER 5 Situator All-in-One KPIs and Specifications

This chapter lists the specifications and KPIs (Key Performance Indicators) of machines on which all the Situator components are installed (All-in-One).

5.1 All-in-one Machine - Specifications

Item	Specification
RAM	64 GB
CPU	12 CPUs (2 * Intel Xeon 6 cores)
Storage	100 GB OS partition 400 GB Application partition (can be combined/added to the OS partition)
Network	2*1 GB Network adapter

5.2 Installed Services and Components - Situator v9.1

Item	Description	Comments
DB	SQL server 2019	Without DWH
Components	RabbitMQ, Couchbase, IDM	
Web server	WebAPI, Web server for Qognify Web Client	Including Forms proxy
Backend	OP, SensorsServer, Automation, Monitoring, BPM, GWH	
ARE		

NOTE: OIC, BI listener and the Control Room application will not be installed on this machine.

5.3 KPIs - Situator v9.1

Subject	Item	static/dynamic data	KPI	Measurement
Sensors				
	Sensor groups	static	100	Total
	Total sensors count	static	10,000	Total
	Camera sensors (out of the total number of sensors)	static	1,000	Total
	Sensor dynamic parameters	static	100,000	Total
	Sensor events non-peak hours (total 22h, other 2h are peak)	dynamic	1,000 1h / 22,000 22h	Per hour / Per day
	Sensor events peak hours - assuming 2h per 24h (simulate 1 in the morning & 1 at the end of the day)	dynamic	2,000 1h / 4,000 2h	2 peak hours per day
	Total sensors events per day	dynamic	26,000	Total per day
	ACS events non-peak hours (total 22h, other 2h are peak)	dynamic	4,000 1h / 88,000 22h	Per hour / Per day
	ACS events peak hours - assuming 2h per 24h (simulate 1 in the morning & 1 at the end of day)	dynamic	5,000 1h / 10,000 2h	2 peak hours per day
	Total ACS events per day	dynamic	98,000	Total per day
	Sensor types	static	20	Total
Gateway				
	Video favorites	static	50	Total
	Number of GWs in Situator	static	10	Total
Customer Implementations				
	Number of automation rules	static	20	Total
	Number of ARE Apps	static	20	Total

Subject	Item	static/dynamic data	KPI	Measurement
Incidents				
	Incident types	static	10	Total
	Number of procedures per incident type	static	5	Total
	Number of procedures (maximum, can be reused between incident types)	static	50	Total
	Number of tasks per procedure	static	5	Per procedure
	Tasks per incidents	dynamic	25	Total
	Conditional tasks per Incidents	static	3	
	Number of incident groups	static	10	Total
	Number of concurrent open incidents	dynamic	400	Total
	Attachments per incident	dynamic	5	Total
	New incidents	dynamic	90 1h / 1,980 22h	Per hour / Per day
	New incidents peak hours - assuming 2h per 24h (simulate 1 in the morning & 1 at the end of day)	dynamic	120 1h / 240 2h	
	Total new incidents per day	dynamic	2220	
	Comments per Incident	dynamic	5	Total
	Incident acknowledge	dynamic	90 1h / 120 1h	Depends if it's a peak hour or regular
	Close incidents	dynamic	90 1h / 120 1h	Depends if it's a peak hour or regular
	IEP per incident	dynamic	10	Total
Users				
	Concurrent CR users	static	30	Total
	Concurrent Web & Mobile users	static	100	Total

APPENDIX A Defining Network Ports

System administrators can define ports for the Situator client and server components. It is recommended to use port numbers between 4000 and 65000.

The tables below outline the default incoming ports and connection types each component uses.

Client Applications

Component A	Component B	Ports
Control Room	Rabbit MQ	5671, 15672
	IDM	80 (HTTP) / 443 (HTTPS)
	Operational Server	8080, 8085
Planning Tool	SQL Server	1433
	IDM	80 (HTTP) / 443 (HTTPS)
	Operational Server	8080, 8085
Reporting Tool	SQL Server	1433
	Rabbit MQ	5671, 15672
	IDM	80 (HTTP) / 443 (HTTPS)
	Operational Server	8080, 8085
OIC Client Browser	OIC Server	443 (HTTPS)
Umbrella monitoring agent	Monitoring Service	55000
	Umbrella monitoring agent	56000

Component Servers

Component A	Component B	Ports
Couchbase	SQL Server	1433
IDM	SQL Server	1433
	RabbitMQ	5671, 15672

Application Servers

Component A	Component B	Ports
Operational Server	SQL Server	1433
	RabbitMQ	5671, 15672
	Couchbase	8091, 8093, 11210
	IDM	80 (HTTP) / 443 (HTTPS)
	Monitoring Service	8090
Sensor Server	RabbitMQ	5671, 15672
	IDM	80 (HTTP) / 443 (HTTPS)
	Operational Server	8080, 8085
	Monitoring Service	8090
Monitoring Service	SQL Server	1433
	RabbitMQ	5671, 15672, 135, 445
	Couchbase	8091, 8093, 11210, 135, 445
	IDM	80 (HTTP) / 443 (HTTPS)
	Operational Server	8080, 8085
	Gateways Host	135, 445
	Situator WebAPI	80 (HTTP) / 443 (HTTPS), 135, 445
	ARE Server	135, 445
	OIC Server	135, 445

Other Components

Component A	Component B	Ports
Gateway Host	RabbitMQ	5671, 15672
	Sensor Server	4010
Situator WebAPI	RabbitMQ	5671, 15672
	Couchbase	8091, 8093, 11210
	IDM	80 (HTTP) / 443 (HTTPS)
	Operational Server	8080, 8085
ARE Server	RabbitMQ	5671, 15672
	IDM	80 (HTTP) / 443 (HTTPS)
	Situator WebAPI	80 (HTTP) / 443 (HTTPS
OIC Server	SQL Server	1433
Logbook Service	RabbitMQ	5671, 15672
	IDM	80 (HTTP) / 443 (HTTPS)
	Operational Server	8080, 8085
BI Listener Service	SQL Server	1433
	RabbitMQ	5671, 15672
	IDM	80 (HTTP) / 443 (HTTPS)
Reporting Service	RabbitMQ	5671, 15672
	Operational Server	8080

To verify whether a port is occupied on the machine:

1. Open the cmd console and type: **netstat –a**.
2. Verify in the *Local Address* column that the port you select is not in use.
3. After selecting a number, make the appropriate changes to the configuration files for the listening service as well as any other services which connect to it.

APPENDIX B Terms and Abbreviations

The acronyms and abbreviations used in the Situator documents are listed below.

Term	Description
ACS	Access Control System
AD	Active Directory
AMS	Application Management Server
API	Application Programming Interface
ARE	Advanced Rule Engine. An advanced rule engine in Situator's Operational Intelligence Center that detects and reacts to specific business scenarios that require handling multiple data sources in complex ways such as correlating data or aggregating and computing data over a time window
AVI	Video format for exporting files
AVMD	Advanced Video Motion Detection
BPM	Business Process Manager
CEP	Complex Event Processing engine
CCTV	Closed-circuit Television
CSV	Comma-separated values (file format)
CR	Control Room
DB	Database
DMZ	Demilitarized Zone
DNS	Domain Name System
DRP	Disaster Recovery Protocol
DVR	Digital Video Recorder
DPA	Data Processing Agreement
DWH	Data Warehouse

Term	Description
EULA	End User License Agreement
FOV	Field of View
FQDN	Fully Qualified Domain name
GIS	Geographic Information System
GPS	Global Positioning Service
GWH	Gateway Host
GMT	Greenwich Mean Time (also Coordinated Universal Time)
gMSA	Group Managed Service Accounts
HA	High Availability
IDM	Identity Management system
IEP	Incident Extended Properties
IP	Internet Protocol
IR	Infrared (light)
LAN	Local Area Network
LOS	Level of Service
LPR	License Plate Recognition - A sensor type
Mbps	Megabits per second
MIB	The Management Information Base is a text file that defines the interface between the agents and the NMS
MKV	Video container format for exporting files
MN	Mass notification - a MN message delivery option available when third-party MNS installed
MNS	Mass notification system - an external, third party system
MSDTC	Microsoft Distributed Transaction Coordinator service
NIC	Network Interface Card

Term	Description
NMS	Network Monitoring System (NMS) is the monitoring service which monitors VisionHub components via SNMP. The SNMP trap events are logged in its database and enables ticketing and notification policies.
NTP	Network Time Protocol - a protocol for distributing time information between computers on a network
NVF	Video container format (Qognify proprietary)
NVR	Network Video Recorder
OIC	Operational Intelligence Center
OS	Operating System
OSD	OnScreen Display
Packaged OpS	Situator Packaged Operational Solutions
PSIM	Physical Security Information Management
PTZ	Pan Tilt Zoom
RAID	Redundant Array of Independent Disks
RFID	Radio Frequency Identification
RSVR	Redundant SVR (Smart Video Recorder)
SIP	Session Initiation Protocol
SLA	Service Level Agreement. Service Levels are defined in Situator and used in Situator's OIC to display trends or trigger actions.
SNMP	Simple Network Management Protocol. A network protocol used for managing and reporting device status and events
SNTP	Simple Network Time Protocol - a simplified version of NTP
SMTP	Simple Mail Transfer Protocol is an Internet standard for electronic mail (e-mail) transmission across IP networks
SVR	Smart Video Recorder

Term	Description
SOP	Standard Operating Procedure
SSL	Secure Sockets Layer
SSO	Single Sign-On
TCP	Transfer Control Protocol
TEP	Task Extended Property
TLS	Transport Layer Security
UC	Uniqueness Constraint
UTC	Coordinated Universal Time (also Greenwich Mean Time)
VMD	Video Motion Detection
VoIP	Voice over IP - generic term to describe the transport of voice over an IP network
VMX	Video Wall
WAN	Wide Area Network
WPF	Windows Presentation Foundation