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How to Install ADISRA SmartView Runtime on Linux

ADISRA

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1. Scope

ADISRA SmartView Runtime is the server process responsible for PLC communications, Database connections, Service and Trigger execution, and other functions such as broadcasting data to the client interfaces (Viewer or the Web Clients) in a multithreaded environment.

2. Summary

This document provides an overview of the ADISRA SmartView Runtime on Linux. This feature is available from version 4.1.0.0 to the latest versions.

You will learn how to deploy, configure, and execute the ADISRA SmartView Runtime on multiple Linux distributions. In the following chapters you will learn the hardware requirements along with the procedures to install ADISRA SmartView Runtime on Linux distributions, license it, and execute applications using the remote management tool or via command line.

Note: Applications for the ADISRA SmartView Runtime are created in the ADISRA SmartView engineering environment. The ADISRA SmartView engineering environment is only available on Windows and not covered by this document.

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3. Architecture

Let's look at the architecture below before proceeding with the document.



The image above shows the 3 processes levels for ADISRA SmartView. The first block represents the Engineering environment which only runs on Windows operating systems. It has the Remote Management Tool that can be used to manage the ADISRA SmartView Runtime environment on Linux. The installation of ADISRA SmartView

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Runtime on Linux is an offline process and will be detailed in the following chapters. As soon as ADISRA SmartView Runtime is installed, and the Remote Management Tool Service is running, you can connect to it from the ADISRA SmartView Engineering environment to license the ADISRA SmartView Runtime, transfer applications, and start/stop the runtime process. The ADISRA SmartView Runtime can also be executed through the command line on the Linux environment, you will also learn how to do this later in this document. (see section 13.2)

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4. Hardware Requirements

The hardware requirements will vary depending on the complexity of the application. The ADISRA SmartView Runtime process has many responsibilities such as PLC communication, Database connections, Service and Trigger execution, and other functions such as broadcasting data to the client interfaces (Viewer or the Web Clients) in a multithreaded environment. The following requirements are recommendations from small to mid-applications.

Processor (CPU):

Minimum:

- CPU: 1.44 GHz
- RAM: 4 GB
- Hard Disk (min): 8 GB

Recommended:

- CPU: 1.7 GHz
- RAM: 6 GB
- Hard Disk (min): 20 GB

Network:

• Ethernet or other network connectivity for communication with Remote Viewer, PLC or other servers and devices.

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5. Software Requirements

5.1. Operating System Compatibility

The ADISRA SmartView Runtime is designed to run on various Linux distributions, including but not limited to:

- Arch Linux (CLI)
- Elementary OS (GUI)
- Zorin OS (GUI)
- Lubuntu (GUI) Ubuntu-based
- Pop!_OS (GUI) Ubuntu-based
- Alpine Linux (CLI)
- Alpine Standard (CLI)
- Alpine Virt (CLI)
- CentOS (Both CLI and GUI)
- Debian (GUI)
- Linux Mint (GUI)
- Ubuntu Desktop (GUI)
- Ubuntu Server (CLI)

5.2. NET Runtime

The ADISRA SmartView Runtime for Linux has different builds for different architectures, and each build contains its relevant .net6 runtime dependencies. The highlighted runtime identifiers below illustrate the current available builds for ADISRA SmartView.

Linux RIDs

- linux-x64 (Most desktop distributions like CentOS, Debian, Fedora, Ubuntu, and derivatives)
- linux-musl-x64 (Lightweight distributions using <u>musl</u> like Alpine Linux)
- Iinux-mus1-arm64 (Used to build Docker images for 64-bit Arm v8 and minimalistic base images)
- linux-arm (Linux distributions running on Arm like Raspbian on Raspberry Pi Model 2+)
- linux-arm64 (Linux distributions running on 64-bit Arm like Ubuntu Server 64-bit on Raspberry Pi Model 3+)
- Iinux-bionic-arm64 (Distributions using Android's bionic libc, for example, Termux)

ADISRA SmartView Runtime for Linux is a self-contained .net6 application, which means there is no need to install the .net6 on the Linux distribution, it will be already packed in the tarball provided by ADISRA, keeping the installation simple and platform specific.

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5.3. Web Server

For the ADISRA SmartView application to serve web pages (so users will have access to the interface through the web client), it is necessary to configure a web server that best suits your deployment. In this document you will learn how to configure Apache as the Web Server.

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6. Modules Available on Linux Runtime

This section provides an overview of the runtime's modules and functionalities that have been migrated to Linux, as well as those that remain unimplemented or not supported.

6.1. Modules Migration Report

Modules	Windows	Linux
Alarms	\checkmark	
Audit	V	
Database	J	
Drivers	v	v
Language	\checkmark	× /
Recipe	v	
Recipe [Smart Recipe]		×
Redundancy		× ×
Remote Tools		V
Reports		×
Security	V	
Services		
Simulation		
System Function Library	V	
Tag History		\checkmark
Triggers		\checkmark
Tunneling	\checkmark	\checkmark
User Function Library	V	V
Viewer [Native] - Running on Linux	J	×

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Viewer [Remote] - Running on Windows	\checkmark	\checkmark
Viewer [Web] - Running on Browser	\checkmark	\checkmark

6.2. Database Migration Report

- ·		- Vie
Database	Windows	Linux
<u>\</u>		
Microsoft Access Database File	\checkmark	×
Microsoft ODBC Data Source		*
Microsoft SQL Server		
Oracle Database	\checkmark	
PostgreSQL		

6.3. Drivers Migration Report

Driver		Windows	Linux
Allen Bradley			
Bacnet			
Mitsubishi		v	UNDER BETA
Modbus-FC23			
Modbus			
Mqtt	l		\checkmark
Omron-CIP	Ì		UNDER BETA
Omron-FINS			UNDER BETA
OPC DA Client			×
OPC UA Client		V	V

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7. Linux Distributions

This section provides an overview of the Linux Distribution and their respective ADISRA Distributions that have been adapted on Linux.

Linux Distribution	ADISRA Distribution
ArchLinux	RHEL
ElementaryOS	Debian
Lubuntu	Debian
РОР	Debian
Zorin	Debian
Alpine Extended	Alpine
Alpine Standard	Alpine
Alpine Virt	Alpine
CentOs	RHĘĽ
Debian	Debian
Linux Mint	Debian
Ubuntu Desktop	Debian
Ubuntu Live Server	Debian

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8. Installation Prerequisites

http://localhost/

This topic provides information to ensure your system meets the necessary prerequisites before installation. If your project does not require web pages, you can skip the Apache installation.

8.1. Apache installation and configuration

To use the Web Viewer to connect to the ADISRA SmartView Runtime on a Linux workstation, it's necessary to install and configure a web server. As an example, we will use the Apache Web Server.

To install Apache on Linux, open a terminal and type the following command:



This will display the default Apache landing page, indicating that Apache is successfully installed and running. In case it is a Linux server, you can test it using the network replacing localhost for the appropriate IP address.

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8.2. Dongle Library installation and configuration

If udev or systemd-udev is not already installed, the following commands will install the library necessary for enabling a hard key on Linux environments:

	Debian-based (Debian, Ubuntu):	
	sudo apt update	
	sudo apt install udev	
/	Alpine Linux:	
	apk update	d
	apk add udev	
	Red Hat-based (CentOS, Fedora):	
	sudo yum install udev	

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Note: If you will be using a softkey instead, you don't need to install udev.

8.3. Linux Alpine distribution - Missing package you need to install manually

While executing the ADISRA SmartView Runtime Linux on an Alpine distribution, you may notice issues related to the Alarms module. The problem is solved by installing a package which, in other Linux distributions, seems to be already installed. Since Alpine is a lighter distribution, it was necessary to include it manually.

Package: tzdata

Therefore, please pay attention to the commands below (9.3.1):

8.3.1. Installing the prerequisites

Run the commands below to install the tzdata package.

su

apk update

apk add bash icu-libs krb5-libs libgcc libintl libstdc++ zlib udev tzdata

8.3.2. Installing the ADISRA Runtime

Note: These commands can also be found in section 9, so if you prefer,⁴ you can skip it to the next chapter.

cat ADISRA-SmartView-4100-Alpine.tar.gz/gunzip | tar -xvf -

cd ADISRA-SmartView-4100-Alpine

chmod +x RemoteToolsServiceLnx

chmod +x RunTimeLnx

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8.3.3. Running the ADISRA Remote Tools Service

skip it to the next chapter. sudo ./RemoteToolsServiceLnx d

Note: These commands can also be found in section 10, so if you prefer, you can

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9. ADISRA SmartView Installation

Considering that not all production Linux hosts have access to the internet, the ADISRA SmartView Linux Runtime will be offered as a tarball (tar.gz) and a set of instructions, but it will be explained in the next chapter.

9.1. ADISRA SmartView Linux Runtime Deployment

Follow the steps below to install ADISRA SmartView Linux RunTime in a Linux target machine.

 Download the tarball (ADISRA-RunTimeLnx-Release.tar.gz) from the ADISRA Web site:

It is important to identify the correct architecture:

Before proceeding with the installation of the ADISRA Runtime, it's important to determine the architecture of the Linux operating system.

Note: The "arch" command is a good way to determine the host architecture.

The example below shows an ARM64 architecture Linux distribution. You can get the architecture by running the command "uname - a". It returns aarch64 (ARM64).



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Identifying the architecture (ARM64, X64), you are ready to download the correct ADISRA SmartView Linux Runtime and proceed with the installation. The download page also provides a different installer for the Alpine distribution.

2. Copy the tarball to the Linux environment

First let's define the installation folder "/home/svlnxadm/". You will need to review the commands below to make sure they match your paths and file name.

Make sure that the tarball is available in the Linux workstation. You need to download it from ADISRA SmartView download page as mentioned in the previous topic:

/home/svlnxadm/ADISRA-RunTimeLnx-Release.tar.gz

3. Unpack the tarball:

cd /home/svlnxadm

cat ADISRA-RunTimeLnx-Release.tar.gz | gunzip | tar -xvf -

4. Make sure that the following directory has been created:

Is -Id /home/svInxadm/ADISRA-RunTimeLnx-Release

svlnxadm@svlnxvm:~\$ ls -ld /home/svlnxadm/ADISRA-RunTimeLnx-Release
drwxrwxr-x 19 svlnxadm svlnxadm 40960 Mar 25 09:48 /home/svlnxadm/ADISRA-RunTimeLnx-Release

5. Make sure that the following files have permission to be executed:

cd /home/svlnxadm/ADISRA-RunTimeLnx-Release Is -I RemoteToolsServiceLnx RunTimeLnx svlnxadm@svlnxvm:~/ADISRA-RunTimeLnx-Release\$ ls -l RemoteToolsServiceLnx RunTimeLnx -rwxrwxr-x 1 svlnxadm svlnxadm 142840 Mar 25 09:39 RemoteToolsServiceLnx -rwxrwxr-x 1 svlnxadm svlnxadm 142840 Mar 25 09:39 RunTimeLnx

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6. If they don't have permission to be executed, issue the following command:



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10. Remote Management Tool

Now that ADISRA SmartView Linux Runtime and its prerequisites have been installed, it's time to execute it. But before that, let's review the Remote Management Tool (RMT). This tool is part of the ADISRA SmartView Engineering environment and allows the users to create a connection between two computers running ADISRA SmartView. The source computer must be a Windows machine, and the target machine can be Windows or Linux machine.



To create a connection, it is mandatory to execute a service in the Linux target machine called RemoteToolsServiceLnx. It opens a safe communication channel with the ADISRA SmartView Engineering environment. After the connection is created, you can transfer applications, start/stop them remotely, license the ADISRA SmartView on the Linux machine and some other functionalities.

10.1. Overview

1. Run the RemoteToolsServiceLnx on the Linux target machine

svlnxadm@svlnxvm:~/ADISRA-RunTimeLnx-Release\$ sudo ./RemoteToolsServiceLnx

2. Open ADISRA SmartView Engineering environment and locate the Remote Management Tool (Top Menu-> Settings-> Remote Management Tool)

(>>> ● 🗄 🖳 🖳 🕫 🕐 🕑 🞯 🚱 🗳 (?) +					
Runtime Verify View Settings Security Search License Tag	5				
Startup Graphic:	Resolution Use Scaling Modifier • Default: 1024 x 768 • Default: 640 x 480 • Custom: 1024 w 768 H • Custom: 0 w 0 H	Configure	OPC Servers Number of Viewer + Connection	Notifications Tags Count	Remote Management Tool +
Graphics	Resolutions	Date and Time			

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3. Add the target system IP address and the port number exposed in the RemoteToolsServiceLnx and click connect.

Target Pro	oject License Logs	
Target Stat	tion	Connect
Host		
Host:	192.168.20.23	Status:
Port:	9004	Connected
User:		Platform:
Password	d:	Machine Name: fabio-VirtualBox
		Operating System Platform: Unix Operating System Version: Unix 6.8.0.35
la stall I a		User Name: root
	gs	Version: 6.0.29
Path:		Get
	fter a connection is establ	lished, you will have access to different functionalitie
4. A	fter a connection is establuch as transfer application	lished, you will have access to different functionalitie
4. A ¹ su	fter a connection is estab uch as transfer application	lished, you will have access to different functionalitie n, license management, remote logs, start/stop
4. At su ex	fter a connection is establuch as transfer application ecution of the remote application	lished, you will have access to different functionalitien, license management, remote logs, start/stop oplication. Please refer to the next sections for more
4. At su e) in	fter a connection is estab uch as transfer applicatior xecution of the remote ap nformation.	lished, you will have access to different functionalitien, license management, remote logs, start/stop oplication. Please refer to the next sections for more
4. At su ex in	fter a connection is establuch as transfer application xecution of the remote application.	lished, you will have access to different functionalitien, license management, remote logs, start/stop oplication. Please refer to the next sections for more
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4. A su e; in	fter a connection is estabuch as transfer application xecution of the remote ap	lished, you will have access to different functionalitie n, license management, remote logs, start/stop oplication. Please refer to the next sections for more

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10.2. Target Tab

This is the initial tab, which allows the user to connect to a remote ADISRA SmartView system. As soon as it connects, the other tabs are enabled. At any point, if the Remote Management Tool window is closed, it closes the connection with the remote management tool service.

·	inagement Tool			- 0	
Target Proje	t License Logs				
Target Static	I ———		Connect Disconnect		
Host:	192.168.20.23		Status:		
Port	9004		Connected		
Port	9004		Platform:		
User:			ADISRA SmartView Version:4.1.0.0		
Password:			Machine Name: fabio-VirtualBox Operating System Platform: Unix		
			Operating System Version: Unix 6.8.0.35		
Install Logs			User Domain Name: fabio-VirtualBox		
Path:		Get	Version: 6.0.29		
			~		
				CI	os
				2	
/				1	
/					
/					
				A A A A A A A A A A A A A A A A A A A	
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10.3. Project Tab

To send the application to the target Linux machine, you will just need to select the target path and it will create a new folder containing the application. This tab also allows sending files and html pages to the target system. In the example below the target folder is used by Apache to serve the web pages.

1		
🕈 Remote Management Tool	>	×
arget Project License Logs		
Upload (This PC -> Remote PC)	Download (Remote PC -> This PC)	
Project Path	Project Path	
Local: C:\Users\fabio\Documents\ADISRA SmartView\De	n Target:	
Target: /home/fabio	Local:	
5		
Run Ston	Download	
Shorear op		
Files	Files	
Target: Ser	end Local: Get	
Web		
Target Folder:		
- /var/www/html/Demo_OpenWeather 4040		
Select the Graphics application folder or a specific graphic:		
C:\Users\fabio\Documents\ADISRA SmartVi Save Ht	tml	
	Close	
A south an anation of sile blacks	to decord and institute on files is stad in th	- 1 :
Another option available is i	to download applications of files located in the	e Lir
system.		
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10.4. License Tab

You will use this tab to manage the ADISRA Linux Runtime licenses. It remotely connects to the security system allowing you to license your application or change the license type for example. (see section 12)

>
nerate license.code
Validate
Advanced
Close
1
1
1
N.
1

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10.5. Log Tab

You can debug the runtime application using the Log tab, but it's important to mention that the log filters, whenever changed, require the application to be reuploaded to the Linux machine.

get Pr	oject License	Logs			
Active					
Severity	Source	Description	Times	Stamp	
0	Tunneling	Starting Engine Tunneling	06/14/	2024 04	:3
0	Tunneling	Engine Tunneling started	06/14/	2024 04	:3
0	History	Starting Engine History	06/14/	2024 04	:3
0	History	Engine History started	06/14/	2024 04	:3
0	Service	Starting Engine Service	06/14/	2024 04	:3
0	Service	Engine Service started	06/14/	2024 04	:3
0	System	Starting Engine Simulation	06/14/	2024 04	:3
0	System	Engine Simulation started	06/14/	2024 04	:3
0	OPC UA Client	t Starting Engine OPC UA Client	06/14/	/2024 04	:3
0	OPC UA Client	tEngine OPC UA Client started	06/14/	2024 04	:3
0	Driver	Starting Engine Drivers	06/14/	2024 04	:3
0	Driver	Engine Drivers started	06/14/	2024 04	:3
0	Database	Starting Engine Database	06/14/	2024 04	:3
0	Database	Engine Database started	06/14/	2024 04	:3
1	DriverRead	Started to read item from tag 'WeatherParams.Longitude' from document 'WeatherLondon'	06/14/	2024 04	:3
1	DriverRead	Started to read item from tag 'WeatherParams.Latitude' from document 'WeatherLondon'	06/14/	2024 04	:3
1	DriverRead	Started to read item from tag 'WeatherParams.Weather[0].id' from document 'WeatherLondon'	06/14/	2024 04	:3
1	DriverRead	Started to read item from tag 'WeatherParams.Weather[0].main' from document 'WeatherLondon	'06/14/	2024 04	:3
	DriverRead	Started to read item from tag 'WeatherParams.Weather[0].desc' from document 'WeatherLondon'	06/14/	2024 04	:3
				3	þ

10.6. RemoteToolsServiceLnx execution

To execute the ADISRA SmartView Linux Runtime using the Remote Management Tool (remote windows machine) we need to connect to the Remote Tools Service. To do so, let's go to the folder containing all the ADISRA SmartView Runtime Linux binaries and execute the RemoteToolsServiceLnx as in the example below. Please change the path to match your installation path.

cd /home/svlnxadm/ADISRA-RunTimeLnx-Release sudo ./RemoteToolsServiceLnx

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If the above information is displayed, you should be able to connect to it using the Remote Management Tool on ADISRA SmartView engineering environment.

10.7. Remote Management Tool execution and connection.

1. Before launching the Remote Management Tool, use the following command in the Linux Workstation to get its IP address:



2. In the Engineering Workstation (Windows), where ADISRA SmartView is installed and running, execute the RemoteManagementTool:

3. Open ADISRA SmartView engineering environment and locate the Remote Management Tool (Top Menu-> Settings-> Remote Management Tool)



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4. Click on the Config button to open the RMT.

5.	Remote Management Tool * Remote Management Config Remote Management Allow support for S on external machine Select the Target tab and fill the "Target address and hit the "Connect" button. P can be configured to a different port:	Redundancy Project Backup Int Tool martView runtimes e. Station Host" with the Linux server IP Please confirm the port number since it
🔭 Remo	ote Management Tool	X
Target	Project License Logs	
- Target S	Station	Connect Disconnect
Host:	192.168.20.23	Status:
Port:	9004	Connected
	The image below shows the expected re Connect Disconnect Status: Connected Platform: ADISRA SmartView Version:4.1.0.0 Machine Name: fabio-VirtualBox Operating System Platform: Unix Operating System Version: Unix 6.8.0.35 User Name: root User Domain Name: fabio-VirtualBox Version: 6.0.29	sult:

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11. Licensing the RunTimeLnx using the Remote Management Tool

The ADISRA SmartView license authorizes a single machine to execute the ADISRA SmartView software. The single license cannot be used on multiple machines since it is associated with the unique components of the specific machine that issued the licensing code.

The license code is generated using a machine's hardware identification, which is based on 3 hardware components: CPU, HDD, and Mother Board. The component-based license ensures that a single license will only enable the software to work on a specific machine. If the user plans to change any of the three hardware components, we recommend the user contact ADISRA to deactivate the license and then have it reactivated after the hardware component has been replaced.

The ADISRA team securely generates each license based on a license code generated by the customer. The license generation steps are explained in detail later in this document. A license can be deactivated at any time, but if it is deactivated, the customer must contact ADISRA to reactivate the license.

Information about your license is available in the Remote Management Tool on the License Tab. The information available is the license status, license type, the maximum number of clients and tags, and the license serial number. The license status is represented by a circle color: green means activated, yellow means trial version, and orange means there are five days remaining until trial expiration.

	Remote Management Tool	– 🗆 X	
	Target Project License Logs		
/			
	License Information		
	Trial - Expires: 4/21/2024 6:12:58 PM Tags: 64000 Clients: 32 Type: RT Serial Number: TRIAL		
1	Hardware ID		d
	Output path: After generating the license code send it to ADISRA	Generate license.code	
	License		
	License path:	Validate	
		Advanced	
		Close	

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11.1. Types of Licenses on Linux

The License System has two license types on Linux:

Trial License (TRIAL)

This license is provided upon installation of ADISRA SmartView. After 30 days, the license will expire, requiring a permanent Runtime License. It is possible to run the application in Runtime mode with a Trial License. However, there is a time limit of 2 hours, that is, the Runtime mode will be closed if it exceeds the time of 2 hours.

Runtime License (RT)

This license does not allow access to the ADISRA SmartView Engineering environment to develop the application, just run the application in Runtime mode with unlimited time.

11.2. Registering a License

ADISRA SmartView gives the user a 30-day development trial when it is first installed. When the 30 days expire, a permanent license will need to be purchased to run the software. The instructions below will show the steps to register a new license:

1. Select the License tab in the Remote Management Tool:

Remote Management Tool	×
Target Project License Logs	
License Type	
● Softkey ○ Hard key	
License Information	
💭 💛 Trial - Expires: 4/21/2024 6:12:58 PM	
Tags: 64000 Clients: 32 Type: RT Serial Number: TRIAL	
Hardware ID	
Output path:	Generate license.code
After generating the license.code send it to ADISRA	
License	
License path:	Validate
	Advanced
	Close

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There are two license types: a Softkey or a Hard Key.

11.2.1. Softkey

The softkey involves receiving a digital license, a ".lic" file, from ADISRA. Follow the steps below to generate and validate the softkey license.

 Click the button labeled "Generate license.code" to generate file containing this machine's unique Hardware ID information. The file location will be displayed in the text box called Output Path.

	5
🕱 License Register	×
ADISRA SmartView Version: 4.1.2.0 License Type Softkey O Hard key	
License Information Trial - Expires: 12/20/2024 3:34:14 PM Tags: 64000 Clients: 32 Type: ENG/RT Serial Number: TRIAL	
Hardware ID Output path: C:\Users\B\Desktop\license.code After generating the license.code send it to ADISRA	Generate license.code
License License path:	Validate Advanced
	ОК

Note: The user can change the Output Path by clicking on the button next to the Output Path text box. Please do not change the file name.

 Attach the text file named "license.code" to an email and send it to info@adisra.com.

The ADISRA will verify your purchase and send back a License Key File that matches the Hardware ID. Download and save the license file to your storage drive. It is important to remember the license file location.

3. Enter the license key file location in License Path text box or browse to locate it by clicking on the in button next to the License path and then click the Validate button.

ADISRA · 6001 W. Palmer Lane, Suite 350-285 · Austin, TX 78727 Phone: 1-833-5ADISRA (1-833-523-4772) · 1-512-993-2949 4. You will be prompted to confirm the operation once the program accepts or validates your License Key.

Your machine is now licensed and ready to use ADISRA SmartView

Close the Register License window and run ADISRA SmartView again.

11.2.2. Hard key

The hard key license is used for a license located on an external removable device called a dongle. Follow the steps below to generate and validate the hard key license.

- 1. Connect the dongle to the machine's USB port;
- 2. Select the License tab in the Remote Management Tool.
- 3. In the "License Type" field, select the "Hard key" option and then click on the "Generate license.code" button.

icense Type	
Softkey Hard key	
icense Information	
🔾 🛑 hard key connected	2
Hardware ID	
Output path: C:\Users\Filippo\Desktop\license.code	Generate license.code
fter generating the license.code send it to ADISRA	
icense	
icense path:	Validate
	Advanced

Note: If you do not have a dongle attached to the machine the License Information will show "No hard key connected".

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4. A file will be generated called "license.code"



- 5. Send an email to "info@adisra.com" attaching the Hard key activation file (license.code). In the body of the email, identify the current version of ADISRA SmartView and the Serial Number of the license, which can be found in the certificate of authenticity. (see section 12.4)
- 6. Once this is done, the ADISRA team will activate the Hard key license. A file called "license.lic" will be sent to your email, in which you have the Hard key activation code.
- 7. Now with the "license.lic" file in your possession, open the License tab in the Remote Management Tool again.
- 8. In the "License Type" field, select the Hard key option. Then click on the "..." button and point to the "license.lic" file. After clicking the "Validate" button, your license is ready to use. You have successfully validated your Hard key.

License R er	
ADISRA	ersion: 4.0.3.3
License Type	
Softkey Hard key	
License Information	
Ġ 🔴 hard key connected	d
Hardware ID	
Output path: C:\Users\Filip	po\Desktop\license.code Generate licen de
After generating the licen	ise.code send it to ADISRA
License	
License path:	2 Validate
	Advanced
	OK

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11.3. Deactivating a License

Each ADISRA SmartView license is registered to a specific machine. To use the Runtime license on another Windows or Linux machine, it will be necessary to deactivate the current license. To execute the deactivation procedure, please follow the steps below:

1. In the License tab in the Remote Management Tool, press the "Advanced..." button:

License Register	
ADISRA SmartView Version: 4.0.3.4	
License Type	
● Softkey ○ Hard key	
License Information	
Ġ 🔵 Activate	
Tags: 64000 Clients: 32 Type: ENG/RT Serial Number: ADS_Gustavo Moraes	
Hardware ID	
Output path: C:\Users\gustavo.moraes\Desktop\license.code	e license.code
After generating the license.code send it to ADISRA	
License	
License path:	Validate
	Advanced
	OK

2. It will open a new window so you may decide where the deactivated license file will be generated:



Note: The user can change the deactivated license file location by clicking on the button next to the "Deactivate License" button.

3. Click the button "Deactivate License" to generate the file.

4. Once deactivated, ADISRA SmartView will ask for the license again and will not work until a regenerated license is validated again.

To validate a regenerated license, send the deactivated license file to <u>info@adisra.com</u> and ADISRA will send a regenerated license back which you can save to the file location

in License Path text box or browse to locate it by clicking on the button next to the License path and then click the Validate button.

1			
🔭 License Regi	ter		
ADISRA Sma	rtView Version: 4.0.3.4		
License Type			
● Softkey ○	Hard key		
License Inform	ation		
G Activat	2		
Tags: 64000	lients: 32 Type: ENG/RT Serial	Number: ADS_Gustave	o Moraes
Hardware ID			
Output path:	\Users\gustavo.moraes\Desktop\lice	ense.code	Generate license.code
After generati	a the license code send it to ADIS	RA.	
Anter generati	ig the licenselcode send it to ADIS		
License			MCL
License path:			Validate
			Advanced
			OK
1			\
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			ζ.
	/		

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11.4. Certificate of Authenticity

When the user purchases a license for ADISRA SmartView, the software vendor/ADISRA will generate a certificate of authenticity for that license, this certificate contains the owner's name, or the company name, the email, along with the license's unique serial number and the hardware ID.

See below an example of a certificate of authenticity:



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12. Application Deployment and Execution

In this topic we will explain how to execute and interact with Linux Runtime.

12.1. Transfer Application

12.1.1. Uploading ADISRA SmartView projects Manually

Applications can be manually transferred by directly moving the application folder from one location to another, eliminating the need for additional configuration.

12.1.2. Uploading ADISRA SmartView projects to Linux using the Remote Management Tool

This is the best tool to transfer and manage the applications on a Linux environment.

To upload a project to Linux, you should connect using Remote Management Tool to the Linux server (the RemoteToolsServiceLnx must be running).

- In the Remote Management Tool window, the 'Local' field should be filled in with the opened project. By default, it will have the current application folder loaded in the Engineering environment, so you probably won't need to change it.
- 2. In the 'Target' field go to the [...] button and choose the path to where the project should be uploaded in the Linux server, then click the 'Upload' button for the action to be completed:

1		
1	🛣 Remote Management Tool	- 🗆 ×
1	Target Project License Logs	
1	Upload (This PC -> Remote PC) Download (Re	emote PC -> This PC)
1	Project Path Project Path	h
1	Local: C:\Users\enrico.tucunduva\Desktop\Screen_Graphic Target:	
	Target: /home/enrico/Documents Local:	
	Run Stop Shortcut Upload	Download
	Files	
	Target: Send Local:	Get
	Web	
	Target Folder:	
	Select the Graphics application folder or a specific graphic:	
	Save Htmi	
		Close

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3. The project is uploaded to the Linux server and can be executed by clicking on the "Run" button.

12.1.3. Uploading web pages to Linux (for Web Viewer access) using the Remote Management Tool

In the project tab the user also has the option to upload files manually or upload the html pages.

 The image below highlights the target folder, the source, and the Save Html button. The source can be selected as the entire Graphics folder or a single graphic.



2. Next, click the [...] button next to the 'Select the Graphics application folder or a specific graphic field to choose the desired graphic to be uploaded.

ſ	Upload (This PC -> Remote PC)	Download (Remote PC -> This PC)	
	Project Path	Project Path	
	Local: C:\Users\enrico.tucunduva\Desktop\Screen_Graphic	Target:	
	Target: /home/enrico/Documents	Local:	
/	Run Stop Shortcut Upload		Download
	Files	Files	
	Target: Send	Local:	Get
	Web		
	Target Folder:		
	/var/www/html		
	Select the Graphics application folder or a specific graphic:		
	C:\Users\enrico.tucunduva\Desktop\Screen_Gra		

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3. If everything is configured correctly, click the 'Save Html' button to upload the graphics.

12.2. Execute the Runtime Process

There are different ways to execute the Linux Runtime, in this section some of them will be explained.

12.2.1. Linux Runtime execution (command line)

To manually execute the Linux Runtime, copy the ADISRA Smart View project to the Linux workstation and type the following command (It will be necessary to type the root password):

note: The *ProjectPath* argument must provide the path to the ADISRA SmartView project file;

cd /home/svlnxadm/ADISRA-RunTimeLnx-Release sudo ./RunTimeLnx ProjectPath="/home/svlnxadm/projects/SVProjects/complete/complete.prj" svlnxadm@svlnxvm:-/ADISRA-RunTimeLnx-Release\$ sudo ./RunTimeLnx ProjectPath="/home/svlnxadm/projects/SVProjects/complete.prj" [sudo] password for svlnxadm: Project path successfully read:[/home/svlnxadm/projects/SVProjects/complete.prj] Inf: Microsoft.hosting.ifetime[14] Now listening on: http://localhost:9003

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12.2.2. Linux Runtime execution (Remote Management Tool)

In the project tab the user also has the option to upload files to the Linux server. After the RMT connection is made, and the project uploaded, simply click the 'Run' button:

		and the second s	
8	📚 Remote Management Tool	~	– 🗆 X
	Target Project License Logs		
	Upload (This PC -> Remote PC)	Download (Remote PC -> This PC)	
1	Project Path	Project Path	
1	Local: C:\Users\enrico.tucunduva\Desktop\Screen_Graphic	Target:	
	Target: /home/enrico/Documents	Local:	
	Run Stop Shortcut Upload		Download
/	Files Target: Send	Files	Get
	Web		
	Target Folder:		
	C:\inetpub\wwwroot\Screen_Graphics_lest		
	Select the Graphics application folder or a specific graphic:		
			Close

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12.2.3. Linux Runtime execution (As a service)

To execute the ADISRA SmartView Runtime as a service so that it becomes available immediately after the boot (before login), the Linux Systemd service manager can be used. The steps below briefly describe how it can be configured.

IMPORTANT: Not all Linux distributions natively support Systemd.

12.2.3.1. Configure the appsettings.json

Edit the appsettings.json file, located in the ADISRA SmartView Linux Runtime installation, and set the ADISRA SmartView project that will be loaded into the Runtime:

/home/svInxadm/ADISRA-RunTimeLnx-Release/appsettings.json



Note: The paths illustrated will vary depending on the installation folder and project path.

12.2.3.2. Create the Systemd service file

The Systemd service file must be created as follows in the path "/etc/systemd/system". The following command will create the file and open the editor:

sudo vi /etc/systemd/system/runtimelnx.service

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Press "i" to enter insert mode, paste the following content and save with ":x":

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svlnxvm		☆ ⊞ br 21:4	9 (¹)
svlnxadm Password			
	Dashboard Simulation Simulated Value: -1288919685 Service Tag Service 1: 39 Tag Service 2: 78 Trigger Trigger: Click To Increment Tag Increment: 0	Modbus	- C ×

12.2.3.5.

Systemd useful commands

Command	Description
sudo systemctl status runtimelnx.service	Descriptionmctl status runtimelnx.serviceDisplays the service status (enabled, started, stopped, etc)mctl start runtimelnx.serviceManually starts the servicemctl stop runtimelnx.serviceManually stops the servicemctl enable runtimelnx.serviceEnables the service to be executed during the system startup (boot)mctl daemon-reloadMust be executed whenever a change to the "runtimelnx.service" file is made.alctl -u runtimelnx.serviceVisualize the outputs generated from the ADISRA SmartView Linux Runtime while the service is running
sudo systemctl start runtimelnx.service	Manually starts the service
sudo systemctl stop runtimelnx.service	Manually stops the service
sudo systemctl enable runtimelnx.service	Enables the service to be executed during the system startup (boot)
sudo systemctl daemon-reload	Must be executed whenever a change to the "runtimelnx.service" file is made.
sudo journalctl -u runtimelnx.service	Visualize the outputs generated from the ADISRA SmartView Linux Runtime while the service is running.

12.3. Ports

The application uses specific ports for some functionalities. Users can change these ports in project, the default configurations are as follows:



This section shows the ADISRA SmartView Viewer being used for remote access.

To access the Runtime remotely, open the Viewer application of the ADISRA SmartView using the Launcher or, go directly to the installation folder (by default, C:\Program Files (x86)\ADISRA\Adisra SmartView\Bin\Viewer.exe). The following window will appear:

🛣 Vi	ewer — 🗆 X	-	
IP:	192.168.1.111		
Port:	9002 rce project download	×.	
✓ Sa	ustom Resolution: w 1280 H 720		
[Test Connection Connect		d

Go to the Linux server and in the Command Prompt use the following command to get its IP address:

hostname -I # 192.168.2.215 2804:3404:101:8f00:3a84:af16:998e:45c7 2804:3404:101:8f00:ecc3:52bc:502c:d949

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Insert the IP address in the 'IP' field and click the test connection button, if the Runtime is active and the connection is successful the following message should appear

Connection is OK OK

You should now be able to click the connect button and the project graphics will be loaded. Please make sure that the startup graphic is selected or else the screens won't be displayed:

N - H - H - H	। 🕒 🤊 🥲	0	6 🔍 📀	• •
Runtime	Verify	View	Settings	Security
Startup Graphic: M	lain			Ŧ
Show Graphics in	the Viewer in the Viewer	Save H	HTML with the e events fall th	document rough objects
			Graphics	

12.5. Web Connection

After saving the graphics as Html and transferring the web pages to the target Linux machine, it is important that you have configured a Web Server. In this example we use Apache as the serves for the web pages and it uses the path "/var/www/html". By default, Apache's installation already places an index.html on that folder, so we can test it "localhost/index.html" using a local web browser for desktop distributions.



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To open the web pages from your application, first make sure you transferred them to "/var/www/html". Let's say "/var/www/html/DemoApp".



12.6. Data Watcher Connection

To remotely connect the Data Watcher to the ADISRA SmartView Runtime Linux please follow the steps below:

ADISRA · 6001 W. Palmer Lane, Suite 350-285 · Austin, TX 78727 Phone: 1-833-5ADISRA (1-833-523-4772) · . 1-512-993-2949 1. To get the Linux IP Address: Go to the Linux server and open a Command Prompt. Use the following command to get its IP address.

hostname -I # 192.168.2.215 2804:3404:101:8f00:3a84:af16:998e:45c7 2804:3404:101:8f00:ecc3:52bc:502c:d949							
 In t the fold As s por 	he Windows compute Data Watcher using t ler. soon as the Data Wat t number (9002 by de	er with the data watche Launcher or dis the Launcher or dis cher opens, you ca efault) and connect	atcher installed, plo rectly from the inst an set the IP addres t to the Linux Runt	ease open callation ss and the ime.			
🕈 Data Watcher			_	o x			
Connected IP: 192.168.20.23	Port: 9002 Connect ataWatcher System Tags]	OptionsLoad	Always On Top			
Tag	Value	Time Stamp	Quality				
	{ [40], String }]		X			
	0	6/14/2024 4:36:01 PM	192	X			
	 ame -I 168.2.215 2804:3404:101:8f00:3a84:af16:998e:45c7 3404:101:8f00:ecc3:52bc:502c:d949 2. In the Windows computer with the data watcher installed, please open the Data Watcher using the Launcher or directly from the installation folder. 3. As soon as the Data Watcher opens, you can set the IP address and the port number (9002 by default) and connect to the Linux Runtime. IP: 192.168.20.23 Port: 9002 Connect Clean DataWatcher System Tags Gue (WEATHER) Gr14/2024 4:3601 PM 192 Stations Gr14/2024 6:3005 PM 192 (I4L) WEATHER, DAR Stations Gr14/2024 6:3005 PM 192 (IMIN) Gr14/2024 6:3005 PM 192 (WIND) Gr14/2024 6:3005 PM 192 (WIND) Gr14/2024 6:3005 PM 192 (IMIN) Gr14/2024 6:3005 PM 192 (IMAIN) Gr14/2024 6:3005 PM 192 						
WeatherParams	stname -I 92.168.2.215 2804:3404:101:8f00:3a84:af16:998e:45c7 p4:3404:101:8f00:ecc3:52bc:502c:d949 2. In the Windows computer with the data watcher installed, please open the Data Watcher using the Launcher or directly from the installation folder. 3. As soon as the Data Watcher opens, you can set the IP address and the port number (9002 by default) and connect to the Linux Runtime. er IP 1921682023 Port 9002 Connect Tag Value Time Stamp Quality X see Load Always On Top Tag Value Time Stamp Quality X ger True 6/14/2024 43601 PM 192 X ger frams (WEATHER) 6/14/2024 43605 PM 192 tude 51,51 6/14/2024 63005 PM 192 ather (I4) WEATHER,PAR) 6/14/2024 63005 PM 192 in (IMAIN) bility 10000 6/14/2024 63005 PM 192 in (IWATHER) X in (IMAIN) bility 10000 6/14/2024 63005 PM 192 in (IMAIN) bility 10000 6/14/2024 63005 PM 192 in (IWATHER) X in (IWATHER)						
.Longitude	-0,13	6/14/2024 6:30:05 PM	192				
■ .Latitude	51,51	6/14/2024 6:30:05 PM	192				
■ .Weather	{ [4], WEATHER_PAR }						
■ .BaseVal	stations	6/14/2024 6:30:05 PM	192				
■ .Main	{ MAIN }						
■ .Visibility	10000	6/14/2024 6:30:05 PM	192				
.Wind	{ WIND }]					
.Dt	6/14/2024 6:19:46 PM	6/14/2024 6:29:32 PM	192				
.DtUTC	1718399986	6/14/2024 6:30:05 PM	192				
WeatherParams2	{ WEATHER }			X			
				X			

Note: The IP Address retrieved by the Linux command should be inserted in the windows command.

4. Now you can start monitoring the application tags remotely.

13. Linux Runtime troubleshooting

This topic provides concise guidance for diagnosing and resolving issues encountered while running Runtime applications on Linux systems.

13.1. How to check if the Runtime executables have permission to be executed

To check if the Runtime executables have permission to be executed, open a Command Prompt and use the following command:

Is -I ./AdisraRunTime/RemoteToolsService ./AdisraRunTime/RunTimeLnx # -rwxrwxr-x 1 svInxadm svInxadm 142840 Dec 27 10:28 ./AdisraRunTime/RemoteToolsService # -rwxrwxr-x 1 svInxadm svInxadm 142840 Dec 27 10:23 ./AdisraRunTime/RunTimeLnx

13.2. Permission denied in Web Viewer

When accessing a project via web viewer it is possible that the folder permissions are blocked. To resolve the problem, open a Command Prompt and use the following command:

sudo chown - R svlnxadm:svlnxadm /var/www/html/<project_name> sudo chmod - R 755 /var/www/html/<project_name>

Note: The user 'svlnxadm' should be adjusted according to the use case scenario, and the same should be done with '<project_name>' using the actual project name.

13.3. Runtime Logs on Linux

If analyzing logs is required, there are different ways to access them (via Remote Management Tool or by configuring logs to be saved locally on Linux for future reference).

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13.3.1. Analyzing Logs using the Remote Management Tool

In the Remote Management Tool, go to the 'Logs' tab and select the 'Active' checkbox:

Remote	e Management To	ol		_	
get Pr	roject License	Logs			
Active					
Severity	Source	Description	TimeStamp		
0	Tunneling	Starting Engine Tunneling	04/12/2024 03:06:29.922 PM		
0	Tunneling	Engine Tunneling started	04/12/2024 03:06:30.642 PM		
0	History	Starting Engine History	04/12/2024 03:06:30.723 PM		
0	History	Engine History started	04/12/2024 03:06:33.036 PM		
0	Service	Starting Engine Service	04/12/2024 03:06:33.113 PM		
0	Service	Engine Service started	04/12/2024 03:06:33.418 PM		
0	System	Starting Engine Simulation	04/12/2024 03:06:33.550 PM		
0	System	Engine Simulation started	04/12/2024 03:06:33.589 PM		
0	OPC UA Client	Starting Engine OPC UA Client	04/12/2024 03:06:33.686 PM		
0	Driver	Starting Engine Drivers	04/12/2024 03:06:33.791 PM		
0	Driver	Engine Drivers started	04/12/2024 03:06:33.914 PM		
0	Database	Starting Engine Database	04/12/2024 03:06:33.996 PM		
0	Database	Engine Database started	04/12/2024 03:06:34.007 PM		
0	Trigger	Starting Engine Triggers	04/12/2024 03:06:34.096 PM		
0	Trigger	Engine Triggers started	04/12/2024 03:06:34.199 PM		
0	Alarms	Starting Engine Alarm History	04/12/2024 03:06:34.304 PM		
0	OPC UA Client	Engine OPC UA Client started	04/12/2024 03:06:34.450 PM		
0	Alarms	Engine Alarm History started	04/12/2024 03:06:34.743 PM		
0	Recipe	Starting Engine Recipes	04/12/2024 03:06:34.819 PM		
0	Recipe	Engine Recipes started	04/12/2024 03:06:34.889 PM		

Close

d

Every time you change the filters; you will need to stop and re-upload the application to the target system and restart it.

13.3.2. Analyzing Logs saved locally on the Linux machine.

You can set the runtime log to be saved locally on the Linux application folder by editing the application to save runtime logs (disabled by default). As soon as you enable it, please stop the application, re-upload it to the Linux machine and start the application. It will save the runtime log to the logs folder inside the application folder.

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Remote Managen	nent Tool		-		×
Target Project Lic	ense Logs				
✓ Active					
L					
everity Source	Description				
DriverRead	Started to read item from tag 'WeatherParams2.Wind.speed' f	from document 'WeatherAustin'			^
DriverRead	Started to read item from tag 'WeatherParams2.Wind.deg' fro	m document 'WeatherAustin'			
DriverRead	Started to read item from tag 'WeatherParams2.Wind.gust' fro	om document 'WeatherAustin'			
DriverRead	Started to read item from tag WeatherParams2.DtoTC from (lue '-0 1257'			
DriverRead	Finished to read item from tag 'WeatherParams, Latitude' value	e '51.5085'			
DriverRead	DriverRead Finished to read item from tag 'WeatherParams Weather[0].id' value '804'	' value '804'			
DriverRead	Finished to read item from tag 'WeatherParams.Weather[0].m	ain' value 'Clouds'			
👼 DriverRead	Finished to read item from tag 'WeatherParams.Weather[0].de	esc' value 'overcast clouds'			
👼 DriverRead	Finished to read item from tag 'WeatherParams.Weather[0].ice	on' value '04n'			
DriverRead	Error to read item from tag 'WeatherParams.Weather[1].id': 'Ir	nvalid parameter'			
DriverRead	Error to read item from tag 'WeatherParams.Weather[1].main'	: 'Invalid parameter'			
DriverRead	Error to read item from tag 'WeatherParams.Weather[1].des	Clear			
DriverRead	Error to read item from tag 'WeatherParams.Weather[1].ico	Сору			
🛛 😢 DriverRead	Error to read item from tag 'WeatherParams.Weather[2].id':	Filter By Origin			
DriverRead	Error to read item from tag 'WeatherParams.Weather[2].ma		÷.		
DriverRead	Error to read item from tag 'WeatherParams.Weather[2].des		- L		~
<					2
		Days to keep: 5		Clos	se
		✓ Save Runtime Logs			
		Days to keep: 5			
		Export Log to File		-	
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