



Check manual in Assets for tank model for correct value

Check pressure gauge values daily.

Quick Start Guide

Leica Cyclone ENTERPRISE

Contents



Introduction

System Specifications

Installation & Licensing

Server Configurations & Scalability

Compatibility

First-Time Login

Additional Features

- when it has to be **right**



Cyclone ENTERPRISE

Introduction

Contents:

Leica Cyclone ENTERPRISE

Features & Benefits

Introduction

Leica Cyclone ENTERPRISE

A new, **user managed**, software solution for the reality capture market, that delivers a simplified **management & collaboration platform**.

Powered by Leica Geosystems' **JetStream technology**, Cyclone ENTERPRISE facilitates:

- Reality Capture Project Management
- Access to rich, full 3D Reality Capture data through desktop programs & web browsers
 - Point clouds, imagery, models, & more
- Secure, flexible, **self-managed deployment** so you can meet your unique IT needs

- when it has to be **right**



Introduction (cont'd)

Features & Benefits

- **Centralized Management:** Control user & data management features from a simple, online, browser-based administration portal.
- **Seamless Integration:** Interoperability with all major CAD products from Hexagon, Autodesk, Bentley, AVEVA, Dassault Systems & others via CloudWorx & JetStream powered technology, delivering rich, reality capture-based feature extraction & analysis workflows.
- **Secure Project Access:** Provide secure access to internal & external users on a per-project basis. No data leaves the premise. Sessions are managed centrally & remotely.
- **Single Source of Truth:** Eliminate redundant & duplicated data sources & enable a common project view thereby improving quality & productivity.
- **Web & Desktop Access:** Access projects via a desktop viewer & CAD plugins, as well as the no-install, online viewer, TruView LIVE, for quick viewing & collaboration from anywhere on any device.
- **Powered by JetStream:** Cyclone ENTERPRISE harnesses the power of Leica JetStream technology for rapid visualization & powerful collaboration.



- when it has to be **right**

Leica
Geosystems



Cyclone ENTERPRISE

System Specifications

Contents:

Browsers

Operating System

Deployments

Server Specifications

System Specifications

Browsers

The following browsers for the listed operating systems are supported:

- Chrome (Windows, MacOS, iOS, & Android)
- Safari (iOS)
- Firefox (Windows)
- Edge (Windows)

Note: Always be sure to have the latest version installed.

- when it has to be **right**

System Specifications (cont'd)

Operating System

- Only Windows deployment is available.
- Supported Windows versions:
 - Windows 10
 - Windows 10 Pro
 - Windows 10 Enterprise
 - Windows Server 2016 (recommended)
 - Windows Server 2019 (recommended)

Deployments

- Cyclone ENTERPRISE supports deployment in Virtualized Environments (VM).
- Cyclone ENTERPRISE supports cloud deployment on Amazon Web Services (AWS).

Note: No Linux or other server environment is supported

Note: It is recommended to use Windows Server. Non-server versions of Windows have user session limitations that may result in some functions not working (see the Troubleshooting chapter in the application's Help for more info)

System Specifications (cont'd)

Server Specifications

Processor	Recommended: 64 Cores, multi-threaded, at 4 GHz or higher Minimum: 8 Cores, multithreaded, at 2.5 GHz or higher
RAM	Recommended: 256 GB or higher Minimum: 32 GB or higher
Graphics	Recommended: 16 GB NVIDIA or AMD GPU with OpenGL 4.6 or newer support Minimum: 8 GB NVIDIA or AMD GPU or higher with OpenGL 4.6 or newer support
Hard Disk	Recommended: <ul style="list-style-type: none">• Installation drive: 2 TB* SSD• Project Storage Location drive(s): SSD(s) of at least the minimum total project storage you will need based on project quantity & average project size Minimum: <ul style="list-style-type: none">• Installation drive: 1 TB* HDD• Project Storage Location drive(s): HDD(s) of at least the minimum total project storage you will need based on project quantity & average project size
Network	Recommended: 10Gbps on-premise & 100Gbps for cloud services Minimum: 1Gbps on-premise & 50Gbps for cloud services

System Specifications (cont'd)

Server Specifications (cont'd)

Hard Disk (cont'd)

Note: 1.25 GB is the **minimum drive space** required for application installation.

However, **Project Import and Publish (as LGS) utilize temporary storage on the installation drive.** A typical import or publish will temporarily require approximately 2.5-times the size of the project being imported or published (e.g., if you are importing a 100 GB LGS file, we suggest having a minimum of 250 GB of free storage on the drive). Therefore, despite only needing 1.25 GB for installation, we recommended at least 1 TB (and possibly 2 TB or more) to accommodate large project imports and publishes. You can use an exemplar project to refine the required temporary storage capacity for both import and publish processes.

Project Storage drives can be added to the system via the Admin UI at any time, therefore expanding your server capacity with additional storage is not a problem. However, if you wish to estimate, we suggest taking an exemplar project, published as an LGS file. This should give a baseline for per-project size and then multiply by the intended/estimated quantity of projects to be managed in Cyclone ENTERPRISE

- when it has to be **right**



Cyclone ENTERPRISE

Installation & Licensing

Contents:

Prepare for installation

Installing Leica Cyclone ENTERPRISE

Migrating JetStream Enterprise Projects

Installing on Amazon Web Services (AWS)

Installing Leica CLM & licensing

Installation & Licensing

Prepare for installation

Update Windows

- From Windows Update, Check for updates & apply all critical security patches.

Configure Antivirus/Antimalware Applications

- Disable antivirus/antimalware or other real-time protection software, or configure antivirus/anti-malware software with the following directory exclusions:
 - %PROGRAMFILES%\Leica Geosystems\Cyclone Enterprise
 - %PROGRAMDATA%\Leica Geosystems\Cyclone Enterprise
 - %COMMONPROGRAMFILES(x86)%\Leica Geosystems\License-Serve

Install the .NET Framework

- Make sure .NET Framework 4.6 or later is installed on Windows

Note: Do not run the Windows Update Service during Cyclone ENTERPRISE installation.

Note: Make sure that no system reboot is pending. You should reboot the computer after Windows Update before installation

Note: Refer to your specific antivirus software documentation on how to configure directory exclusions.

- when it has to be **right**

Installation & Licensing (cont'd)

Installing Leica Cyclone ENTERPRISE

1. Right-click on the Cyclone ENTERPRISE setup file & select “Run as Administrator”.
2. Follow the directions in the InstallShield Wizard.
3. Choose the Storage folder location & Select Next.
4. To complete the installation:
 - a. Select Yes, I want to restart my computer now.
 - b. Select Finish.

The installation will create & use the following folders:

- %PROGRAMFILES%\Leica Geosystems\Cyclone ENTERPRISE
- %PROGRAMDATA%\Leica Geosystems\Cyclone ENTERPRISE

Note: You must have administrative privileges on your Windows machine to correctly install Cyclone ENTERPRISE.

Note: Installation of Cyclone ENTERPRISE requires at minimum 1.25 GB of storage space for the application, but please see the server specifications for recommended available storage.

Note: You cannot install Cyclone ENTERPRISE on the same system as JetStream Enterprise. Please see the next slide for more information.

Installation & Licensing (cont'd)

Migrating JetStream Enterprise Projects

1. Uninstall JetStream Enterprise from the system. This will NOT remove your project data.
2. Install Cyclone ENTERPRISE on the same system.
3. During installation, Cyclone ENTERPRISE will detect the previous JetStream Enterprise database & migrate the Project Storage Location information into the Cyclone ENTERPRISE database.
4. After installation is complete, the Root user can login & navigate to **Administration | Server | Storage Locations**.
5. Root user can use the "Reconnect" feature for each migrated Storage Location to connect the data to the Cyclone ENTERPRISE database & make the Projects available.
6. All Projects in reconnected storage will be added to the Default Group.
7. JetStream Enterprise has no concept of Users or Groups; it is therefore recommending any user-access permissions and/or organization of Projects into Groups be conducted at this stage.

Note: JetStream Enterprise & Cyclone ENTERPRISE can NOT run simultaneously on the same machine.

Note: It is recommended to make a backup of data of your Storage Locations before proceeding.

Note: Once your JetStream Enterprise projects are "reconnected" to the Cyclone ENTERPRISE database, they will NOT be backwards compatible.

Note: The server machine hardware requirements for Cyclone ENTERPRISE are very different from the hardware requirements for JetStream Enterprise in order to support TruView LIVE.

- when it has to be **right**

Installation & Licensing (cont'd)

Installing on Amazon Web Services (AWS)

The following steps are required for installation on AWS:

1. Create your AWS account
2. Obtain AWS API Tokens
3. Install AWS CLI v2 for Windows
4. Configure AWS CLI Tool
5. AWS Region List
6. Configure AWS Security Group for Cyclone ENTERPRISE
7. Obtain Windows Server 2019 with NVIDIA Driver AMI
8. Create New Key Pair
9. Create Storage Config File
10. Launch EC2 Instance
11. Obtain Administrator Password
12. Get Public IP Address of EC2 Instance
13. Accessing Your EC2 Instance
14. Initialize Data Storage Disk
15. Stop Your EC2 Instance
16. Restart Your EC2 Instance
17. Installing Leica CLM
18. Installing Leica Cyclone ENTERPRISE

Note: See the Help document for full, detailed instructions.

- when it has to be **right**

Installation & Licensing (cont'd)

Installing Leica CLM & licensing

1. Install Leica CLM.
2. Open the Client License Manager for Floating Licenses located here in Windows: **Start Menu | All Programs | Leica Geosystems | Client License Manager** (do NOT choose the Node-locked CLM).
3. Choose the Activate new licenses option.
4. Enter your Entitlement ID (EID) in the open field. To enter multiple EIDs separate them with a semicolon ";" & NO space.
5. After you have entered your EID, choose the Check for Activatable licenses to link in the bottom right of the page.
6. Once your licenses are activated, you can start using Cyclone ENTERPRISE.

Using a Central/Remote CLM server

To use CLM on a separate machine, the following configuration file must be edited:

- "C:\ProgramData\Leica Geosystems\Cyclone ENTERPRISE\jetstreamconfig.ini"

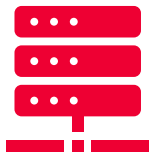
By default, the CLM server is set as the "localhost" (LicenseManagerHostName=localhost), which is the same machine. You may replace "localhost" with the IP address of the central/remote CLM server you wish to use.

Note: Cyclone ENTERPRISE supports Client License Manager (CLM), version 1.8.1 or newer.

Note: After a computer reboot, you may need to wait for a few minutes to restore the CLM server.

Note: If you want to activate a license offline, follow instructions in Leica CLM on setting up an EID (i.e., license) offline.

- when it has to be **right**



Contents:

Port Configurations

Firewall Rules

Setting up HTTPS connection...

Configuring Temporary Storage Locations...

Cyclone ENTERPRISE

Post-Installation System & Network Configurations

Post-Installation System & Network Configurations

Port Configurations

- The default port number is 5050
- The customer can change it to other ports by editing the configuration file. By default, the configuration file is named “**config.json**” & is located at “C:\Program Files\Leica Geosystems\Cyclone Enterprise\Production”.
 - See section Setting up HTTPS connection for Cyclone ENTERPRISE for more information on changing port settings.

Firewall Rules

Firewall settings are required for all server machines.

- Cyclone ENTERPRISE needs sets of firewall rules to allow required traffic by the program.
- Cyclone ENTERPRISE's installer changes Windows firewall settings to allow inbound traffic on **ports 80, 443, 5050** for both **TCP & UDP**.
- If the user modifies the port numbers, user must also update the Windows firewall rules to match the modified ports.

Note: It is strongly recommended to allocate a dedicated machine for running Cyclone ENTERPRISE to reduce the possibility of port number collision.

- when it has to be **right**

Post-Installation System & Network Configurations (cont'd)

Setting up HTTPS connection for Cyclone ENTERPRISE

1. Purchase a domain name from a domain name registrar.
2. On the registrar website, create a DNS “A” record pointing to the public IP address of your Cyclone ENTERPRISE server.
3. Allow inbound traffic.
4. On the Cyclone ENTERPRISE server, open the proxy configuration file "C:\Program Files\Leica Geosystems\Cyclone Enterprise\Production\caddyfile" in a text editor.
5. Replace the second line with your Cyclone ENTERPRISE URL (e.g., *cycloneenterprise.company.com*).
6. Save the configuration file.
7. Open the Windows Task Scheduler. Locate **CycloneEnterpriseHTTPSProxy** in the list.
8. Right click on **CycloneEnterpriseHTTPSProxy** & select **Enable**.
9. Right-click on **CycloneEnterpriseHTTPSProxy** again & choose **Run**.
10. Verify that HTTPS is working by opening the URL in a browser, e.g., *https://cycloneenterprise.company.com*.

Note: See Cyclone ENTERPRISE Help document for full instructions.

- when it has to be **right**



Post-Installation System & Network Configurations (cont'd)

Configuring Temporary Storage Locations for Import and Export

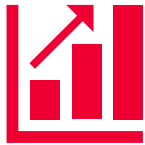
- The storage location can be modified within the **config.json** file in the "C:\Program Files\Leica Geosystems\Cyclone ENTERPRISE\Production" folder.

```
"filestore": {  
  "path": "C:/ProgramData/Leica Geosystems/Cyclone ENTERPRISE",  
  "resources": "C:/ProgramData/Leica Geosystems/Cyclone ENTERPRISE/Resources",  
  "upload": "C:/ProgramData/Leica Geosystems/Cyclone ENTERPRISE/upload",  
  "export": "C:/ProgramData/Leica Geosystems/Cyclone ENTERPRISE/export"  
}
```

Note: See Cyclone ENTERPRISE Help document for full instructions.

- when it has to be **right**





Contents:

Scalability

Configurable Settings

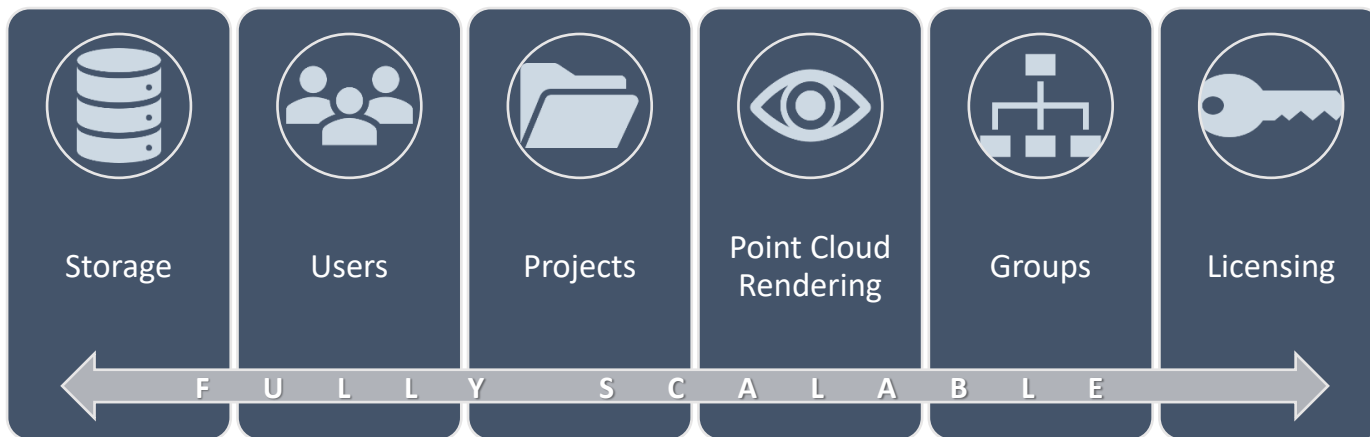
Cyclone ENTERPRISE

Server Configurations & Scalability

Server Configurations & Scalability

Scalability

- Cyclone ENTERPRISE is scalable to support enterprise-level needs. Cyclone ENTERPRISE can render an unlimited number of points, store unlimited number of projects, & manage unlimited number of Users, & Groups*.



Note: Please refer to scalability whitepaper & help document for more details.

Note: Groups are controlled by licensing, but any quantity can be purchased. has to be right

Server Configurations & Scalability (cont'd)

Configurable Settings

- The configurable server settings allow customization based on performance & scalability needs.
- The scalability of a deployment depends on the number of concurrent users, workflows, & the server hardware.
 - **Streaming in TruView LIVE:** It requires all computation & rendering to be handled by Cyclone ENTERPRISE. Therefore, TruView LIVE is the most substantial consumer of system resources.
 - **Streaming into Desktop Client Applications:** Desktop client applications (e.g., CloudWorx, Cyclone 3DR, & others) rely on some computational power on the client machine, reducing dependency on server-side resources.
 - **Number of cores per TruView LIVE session:** Assigning a lower number of cores per TruView LIVE session can assist with the larger volume of concurrent user; however, it may result in increased latency & degraded performance per-user.
 - **Number of TruView LIVE sessions:** Cyclone ENTERPRISE allows users to limit the number of TruView sessions to prevent overloading the system & degrading performance.

Note: Please refer to Cyclone ENTERPRISE Scalability whitepaper & the application Help for more details.

- when it has to be **right**

Server Configurations & Scalability (cont'd)

Configurable Settings (cont'd)

- Based on benchmark test results, default values are set for these parameters to ensure the performance of the system.
- The following table provides the default values:

Parameter	Description	Default Value
Cores	Number of CPU Cores per TruView LIVE session	4
SharedCores	Number of shared CPU Cores for TruView LIVE 'processor overflow' & reserved cores for other processes	4
DynamicPixel	Dynamic Resolution during movement (e.g., 3D orbit or flythrough modes)	250,000 pixels
CachedSetups	Number of Cached Neighboring Setups to improve setup-to-setup transitioning	20

Note: Please refer to Cyclone ENTERPRISE Scalability whitepaper & Help documentation for more details.

- when it has to be **right**

Server Configurations & Scalability (cont'd)

Configurable Settings (cont'd)

- The TruView LIVE parameters can be modified by editing the **TruViewLIVE.ini** configuration file in “C:\ProgramData\Leica Geosystems\Cyclone ENTERPRISE” folder.

```
Cores=4
SharedCores=4
DynamicPixel=250000
CachedSetups=20
```

- The number of TruView LIVE sessions is controlled by defining the number of accessible ports under the “FrameServer” configuration list of ports. This is found in the **config.json** file located in the “C:\Program Files\Leica Geosystems\Cyclone ENTERPRISE\Production” folder.

```
"server": {
  "host": "localhost",
  "port": 5050
},
"frameserver": {
  "path": "../FrameViewer.exe",
  "ports": [
    | 9061, 9062, 9063, 9064, 9065, 9066, 9067, 9068, 9069, 9070
  ]
},
"jetstreamserver": {
  "path": "../JetStreamSrv.exe",
  "port": 9050
},
```

Note: See Cyclone ENTERPRISE Help documentation for full instructions.

- when it has to be **right**

Server Configurations & Scalability (cont'd)

Configurable Settings (cont'd)

Parameters	Qty or Size	Latency
Number of CPU Cores	▲	▼
	▼	▲
Shared number of CPU Core	▲	▼
	▼	▲
Dynamic frame resolution	▲	▲
	▼	▼
Number of Cashed Setups	▲	▼
	▼	▲

Legend:

- ▲ Increases by increasing the parameter value
- ▼ Decreases by increasing the parameter value
- Favorable impact
- Unfavorable impact

Note: Please refer to Cyclone ENTERPRISE Scalability whitepaper & Help document for more details.



Cyclone ENTERPRISE

Compatibility

Contents:

Features

Importing Project Files

Compatibility

Features

Feature vs Product	Cyclone CORE	Cyclone REGISTER 360 (including BLK Ed.)	CloudWorx (All Modules)	TruView (f.k.a., JetStream Viewer)	TruView LIVE	Rithm powered by JetStream
Publish to Cyclone ENTERPRISE	2021.0 & higher	2021.0 & higher	n/a	n/a	n/a	n/a
Open Cyclone ENTERPRISE Projects	n/a	n/a	2021.0 & higher	2021.0 & higher	2021.0 & higher	2021.0 & higher
Add Models	n/a	n/a	n/a	2021.0 & higher	n/a	n/a
Edit Models	n/a	n/a	n/a	2021.0 & higher	2021.0 & higher	n/a
Add GeoTags	*	*	2021.0 & higher	n/a	n/a	n/a
Edit GeoTags	n/a	n/a	2021.0 & higher	2021.0 & higher	2021.0 & higher	n/a
Add/Edit Snapshots	n/a	n/a	2021.0 & higher	2021.0 & higher	2021.0 & higher	n/a
Access & Download Assets	n/a	n/a	2021.0 & higher	2021.0 & higher	2021.0 & higher	n/a

* GeoTags can be added from Cyclone CORE and Cyclone REGISTER 360 prior to publishing to Cyclone ENTERPRISE.

Compatibility (cont'd)

Import Project Files

LGS	Cyclone ENTERPRISE 2021.0
1.5.1	✓
1.6.0	✓
1.6.2	✓
2020	✓
2020.1	✓
2021	✓

JSA	Cyclone ENTERPRISE 2021.0
1.4.1	✓
1.5.1	✓
1.6.0	✓
1.6.2	✓
2020	✓
2020.1	✓



Cyclone ENTERPRISE

First-Time Login

Contents:

Launch Cyclone ENTERPRISE

First-time Login Credentials

First-Time Login

Launch Cyclone ENTERPRISE

- Cyclone ENTERPRISE can be opened using any supported web browser.
- The default address and port for Cyclone ENTERPRISE are as follows:
 - **Address:** localhost
 - **Port:** 5050
- To access the address, type `http://localhost:5050/` in the browser



Note: See the list of supported browsers in the Software Requirements section.

Note: The `http://localhost:5050/` is for accessing Cyclone ENTERPRISE on the **machine on which it is installed**.

Note: If you are accessing Cyclone ENTERPRISE from another machine on the same network, replace "localhost" with the IP address of the Windows machine Cyclone ENTERPRISE is installed on (e.g., `http://192.0.0.0:5050`).

First-Time Login (cont'd)

First-time Login Credentials

- During installation, a default Root user is created.
- The Root user credentials are required when logging into Cyclone ENTERPRISE for the first time.
- The username and password for the "Root" user account are as follows:
 - **Username:** root
 - **Password:** root

Note: Once logged in for the first time as Root, you may begin creating other users.

Note: You will be required to change the default password for the Root user upon first login.

Note: The default root user password ("root") is only valid for **48 hours** after Cyclone ENTERPRISE is installed and the server is initiated. If you do not login within this period, you will be required to reset the root user's password by running the "ResetPassword.exe" utility in the application's installation directory.



Cyclone ENTERPRISE

Additional Features

Additional Features

To setup and run Cyclone ENTERPRISE addition features are provided. Please refer to Cyclone ENTERPRISE **Help Document** and published **Whitepapers** for more details.

Some of the important features include:

- Creating and Editing Users
- Publishing and Uploading to Cyclone ENTERPRISE
- Managing Projects in Cyclone ENTERPRISE
- Checking license status
- Customizations
- Downstream Consumption
- and more