

Korbyt OnPrem and Hybrid Server 3.7

Minimum Requirements

- Minimum Hardware Requirement Statement..... 2
- Korbyt™ On-Premise Hardware and Software Requirements for Server 3
 - Supported Operating Systems 3
 - Recommended software selections..... 3
 - Required Repositories..... 4
 - Hardware Requirements..... 5
 - Mount Points and Distribution 6
- Software Installation and Configuration..... 8
 - Installation Location..... 9
 - Administrator Accounts 9
 - Dedicated Server..... 9
- Network Configuration 9
 - Internet Access..... 10
 - Client Requirements 10
 - Ports and Protocols* 10
- Basic Korbyt™ On-Premise and Hybrid Architectures 11
- General Server Notes..... 11

Minimum Hardware Requirement Statement

This document outlines specific selected products and application usage to determine the recommended minimum configurations for Korbyt On-Premise and Hybrid server software. Unless otherwise specified, the customer is responsible for provision and setup of any network/LAN devices and/or connections.

Hardware that does not meet the minimum requirements may result in varying degrees of performance degradation or failure to operate. Korbyt Technical Support may require bringing the hardware platform into compliance before support can be provided. Additional professional services may be required for hardware to meet the recommended minimum requirements.

Any recommendations made by Korbyt regarding the clients' personal computers, servers, and applications are based on Korbyt's experience and understanding of the intended use of Korbyt products. As with any computer-based system, individual requirements and performance may vary.

The optimal configuration of software and hardware may depend on a variety of factors including, but not limited to: the configuration of the installed Korbyt software, outbound message activity, the number of attached endpoints, the number and complexity of applications monitored, the size and complexity of the user program options selected, the amount and rate of delivery of the data to the personal computer where the Korbyt™ server system resides, and other computer systems.

Korbyt™ On-Premise Hardware and Software Requirements for Server

Hardware requirements may vary depending on the individual installation demands. Examples of factors that result in increased hardware requirements are:

- Large content demands (i.e. a large number of videos)
- Large data collection demands
- A very low data collection interval
- A large number of media players

Supported Operating Systems

- Ubuntu 22.04 LTS 64-bit (Preferred)
 - Installed with no GUI
 - Minimal installation option
- RedHat Enterprise Linux 8.6 - 8.8 (no support for 9.x)
 - RHEL requires approval by Korbyt
 - This is only supported where the Korbyt application controls the root account and the server is treated as an appliance and not a multi-purpose server.
 - If there are special requests and needs on the dedicated server, then the solution will need to be on Ubuntu 22.04.
 - Customer must provide a RHEL license key and/or login

Recommended Software Selections

- Ubuntu - Standard system utilities and OpenSSH server
 - Installed with no GUI
 - Ideally the minimal installation

- RHEL – Minimal and OpenSSH server
 - Installed with no GUI

Required Repositories

Customers must provide network access to the following repositories from the server:

Ubuntu

<https://deb.nodesource.com/>
https://*.yarnpkg.com/debian/

The following are available from the Ubuntu operating system repositories:

- docker
- docker-compose
- nodejs
- phppgadmin
- nginx
- Awscli (optional)

Korbyt's AWS repositories
• <https://7482592255855.dkr.ecr.us-east-1.amazonaws.com>

RHEL

- **Epel release 8** - <https://dl.fedoraproject.org/pub/epel/epel-release-latest-8.noarch.rpm>
- **Yarn** - <https://dl.yarnpkg.com/rpm/yarn.repo>
- **PostgreSQL** - https://download.postgresql.org/pub/repos/yum/repорpms/EL-8-x86_64/pgdg-redhat-repo-latest.noarch.rpm
- **RPM Fusion** - <https://download1.rpmfusion.org/free/el/rpmfusion-free-release-8.noarch.rpm>
- docker
- docker-compose
- nodejs
- nginx
- Awscli (Optional)

Korbyt's AWS repositories

- <https://482592255855.dkr.ecr.us-east-1.amazonaws.com>

Hardware Requirements

Processor

- Standard installs: 8 physical cores or above, \geq 2.4GHz server class
- Medium installs: 12 physical cores or above, \geq 2.4GHz server class
- Large installs: 16 physical cores or above, \geq 2.4GHz server class

Memory

- Standard installs: 16GB RAM or above
- Medium installs: 24GB RAM or above
- Large installs: 32GB RAM or above

Hard Disks

SSDs are required as the hard drive option

- Standard installs:
 - 3 SSD minimum
 - Docker Containers and Postgres will be installed on a dedicated SSD
 - Data Ingestion will be installed on a dedicated SSD
 - All other applications will be installed on the OS drive
- Medium installs:
 - 3 SSD minimum, 4 SSDs recommended
 - OS installed on a dedicated SSD
 - Docker Containers and Postgres will be installed on a dedicated SSD
 - Data Ingestion will be installed on a dedicated SSD

- It is recommended a dedicated SSD be provided to host all other applications/services
- Large installs:
 - 4 SSD minimum
 - OS installed on a dedicated SSD
 - Docker Containers and Postgres will be installed on a dedicated SSD
 - Data Ingestion will be installed on a dedicated SSD
 - All other applications/services will be installed on a dedicated SSD

Recommendations and Notes on Individual Drives

- Fault tolerant RAID arrays are recommended (eg RAID 01, 10, etc)
- Individual drive sizes \geq 100GB
- 500GB minimum recommended for the drive hosting content
 - Larger minimum drive sizes may be required based on content and data needs
- Device drive hosting `/var/lib/` (containers and database) will grow at a slower rate than the drive hosting `/var/www/html` and may be capped at an appropriate size based on total available space
- Read and write times \geq 150Mb/s recommended
- Required drive times
 - Sequential Reads and Writes $>$ 50 Mb/s
 - Random Reads $>$ 0.3 MB/s
 - Random Writes $>$ 0.5 MB/s
- Response times under 10 milliseconds
- For large systems incorporating external storage or SANs: customers should include internal IT/ Storage/SAN teams in pre-installation correspondence with Korbyt engineers to guarantee optimal performance.

Mount Points and Distribution

Ubuntu Mount Points

There are five partitions required to be isolated for Korbyt:

PostgreSQL and Docker - /var/lib

Data ingestion, Korbyt logs - /opt/korbyt
 Web services, content - /var/www/html
 Logs - /var/log
 OS - /

Ideally these five partitions would be on their own physical or virtual disks to avoid throughput issues, but as a minimum having these five separate partitions makes for a more stable installation.

These match to the customer recommendations in the table below:

Install size	Disk no.	Use	Partition	Rec %
Standard – 4 disk preferred	4	Logs	/var/logs	10%
	3	Korbyt Application Containers	/var/lib/	45%
	2	Data Ingestion + Korbyt logs	/opt/korbyt/	10%
	1	All other apps + OS on OS drive	/ (existing OS partition, /var/www/html)	35%
Medium	3	Korbyt Application Containers	/var/lib/	40%
	2	Data Ingestion + Korbyt logs	/opt/korbyt	10%
	1	OS	/	20%
	4 (if only 3 drive s, then on 1 with OS)	All other apps on dedicated drive if possible	/var/www/html & /var/log (if no 4 th drive add partitions to OS drive if possible)	30% (if only 3 drives, move 80% to root)
Large	3	Korbyt Application Containers	/var/lib/	40%
	2	Data Ingestion	/opt	10%
	1	OS	/	10%
	4	All other apps on dedicated drive	/var/www/html & /var/log, two partitions, the larger being for content on the /var/www/html mount point.	40%

Red Hat Enterprise Linux (RHEL) Mount Points

Install size	Disk no.	Use	Partition	Rec %
Standard – 4 disk preferred	4	Logs	/var/logs	10%
	3	Korbyt Application Containers	/var/lib/	45%
	2	Data Ingestion + Korbyt logs	/opt/korbyt/	10%
	1	All other apps + OS on OS drive	/ (existing OS partition, /var/www/html)	35%
Medium	3	Korbyt Application Containers	/var/lib/	40%
	2	Data Ingestion + Korbyt logs	/opt/korbyt	10%
	1	OS	/	20%
	4 (if only 3 drives, then on 1 with OS)	All other apps on dedicated drive if possible	/var/www/html & /var/log (if no 4 th drive add partitions to OS drive if possible)	30% (if only 3 drives, move 80% to root)
Large	3	Korbyt Application Containers	/var/lib/	40%
	2	Data Ingestion	/opt	10%
	1	OS	/	10%
	4	All other apps on dedicated drive	/var/www/html & /var/log, two partitions, the larger being for content on the /var/www/html mount point.	40%

Software Installation and Configuration

Installation Location

The Korbyt application must be installed as root.

Administrator Accounts

An administrator account with sudo privileges or the ability to run commands as sudo is required to install the Korbyt™ On-Premise and/or Hybrid server software.

On Ubuntu and RedHat, post-installation, the Korbyt application can use a service account to run docker commands.

The admin account is used for application upgrades. If this admin account is not allowed to exist during normal operation mode, a system administrator will have to perform OS patches and software upgrades by providing root access and then initiating a software upgrade from the CMS. Without the required admin privileges, these actions will result in errors.

Dedicated Server

System resources are reserved solely for the Korbyt™ On-Premise and/or Hybrid server. All other server applications (other roles, features, and/or services) are restricted. No other DB instance, non-Korbyt applications, nor disk-sharing are allowed.

Network Configuration

The server's network connection must be able to access necessary internal and external domains, servers, media players, systems, and data sources as necessary. DNS is required on the network segment or VLAN hosting the Korbyt™ server(s).

Minimum 100 Mbps connection

1 Gbps connections Gigabit NIC recommended

Internet Access

Korbyt server requires Internet access to the Korbyt™ cloud servers. https://*.korbyt.com port 443.

Client Requirements

Web Browser: Chrome web browser version 56.0.2924 or later

Ports and Protocols*

Content Caching: TCP 8081

Database: Port is user defined; default is 5432

Data Ingestion: Apiary (Script Processor) Port is user defined; default is 55940

Web Services: TCP 8085

Web Server (external): TCP 80

Web Server (internal): TCP 8900

The following ports are internal loopback ports:

PostgreSQL at port 5432 for loopback access only

Data Ingestion/Script-Processor services at port 55940 for loopback access only

Ports 6001, 6002, 6003, 6004 - need to be open for loopback (for NGINX)

korbyt-tasks	4000	localhost	
korbyt-playerWS	6001	localhost	
korbyt-dataWS	6002	localhost	
korbyt-goWS	6003	localhost	
korbyt-utilityWS	6004	localhost	
contentcaching	8081	internal network	KDA's & Inview
deployment-agent	8087	localhost	
nginx	8085	internal network	KDA's & Inview
data-ingestion	55940	localhost	
hybrid-data	55931	localhost	
korbyt-log-collector	55932	localhost	
korbyt-log-pusher	55933	localhost	

*Additional ports may be required depending on specific data source integrations. Please consult with Korbyt Professional Services for your specific installation. If the hybrid server

has SSL, then only port 443 needs to be open for the hybrid server to communicate out to the cloud. 8081 and 8085 are between the hybrid server and end points (players, inviews).

Basic Korbyt™ On-Premise and Hybrid Architectures

[Architecture Diagram can be found here](#)

General Server Notes

The Korbyt™ server may require exclusions from real-time virus scan and other third-party scanning software for Korbyt directories, file folders, the file content and some running processes. Specific details on folder structure and running processes to potentially exclude is available upon request.

Korbyt also may need exclusion from proxies with deep packet inspection services.

Under special circumstances and to improve the system's performance, Korbyt Professional Services or Technical Support may recommend the following:

- Installing a second non-virtual, standalone server as part of the solution design or if doing so improves server performance issues attributed to inadequate system resources.
- Adding resources including storage, memory, and CPUs to the Korbyt™ server.
- Pre-processing calculations before being sent to the Korbyt™ server.
- Increasing refresh intervals to decrease queries on the Korbyt™ server.
- Increasing network bandwidth / reducing network latency.
- Increasing server IOPS / Disk write speeds.