



PERFORMIX



Electronic Logbook

Go paperless, Enforce Compliance and
Accelerate Digital Transformation

One of the most valuable commodities of the 21st Century is Information. The Industry 4.0 Digitization revolution aims to fully leverage the data available in the manufacturing enterprise, and convert it into information, and eventually to actionable intelligence. The tools and technologies to do this already exist, if only data was made available.

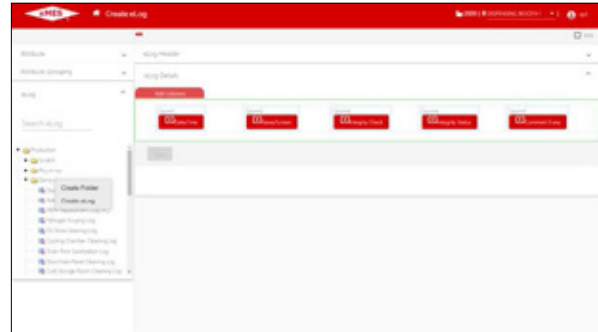
One of the biggest stumbling blocks in leveraging the technologies available in Industry 4.0 digitization is paper records. Performix eLogbook solutions helps in eliminating paper logbooks, and making information available for analysis, the instant it is created.

Intuitive Interface

Performix eLogbook provides an intuitive drag and drop interface for defining logbook formats. All the common data elements required to define a logbook are available in the elements-library.

All the logbook author needs to do is drag and drop them on the canvas on the right to define a structure, and the logbook is ready to use.

The lifecycle of a logbook – edit, review, release - is managed with electronic signatures and full audit trail of changes.



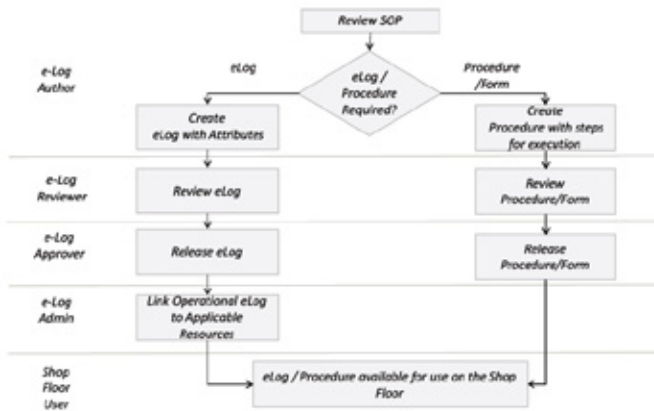
Manual and Auto mode logging

Performix eLogbook can create log entries automatically based on events, or manually based on human intervention.

In the automatic mode, eLogbook logs the start and end times of all Operations for each Resource. The logged events can be viewed using the Resource Log Card.

In the Manual mode, eLogbook allows the creation, configuration, linking and population of any number of logbooks.

Defining a logbook format and business logic behind it is required to be done only for the logbook template (unique format). Once the template is defined, it can be very quickly applied to hundreds of resources, effectively creating thousands of logbooks ready for use.



Logical Architecture

The eLogbook product runs on an on-premise server or on the Cloud. In either case, it runs as a virtual machine.

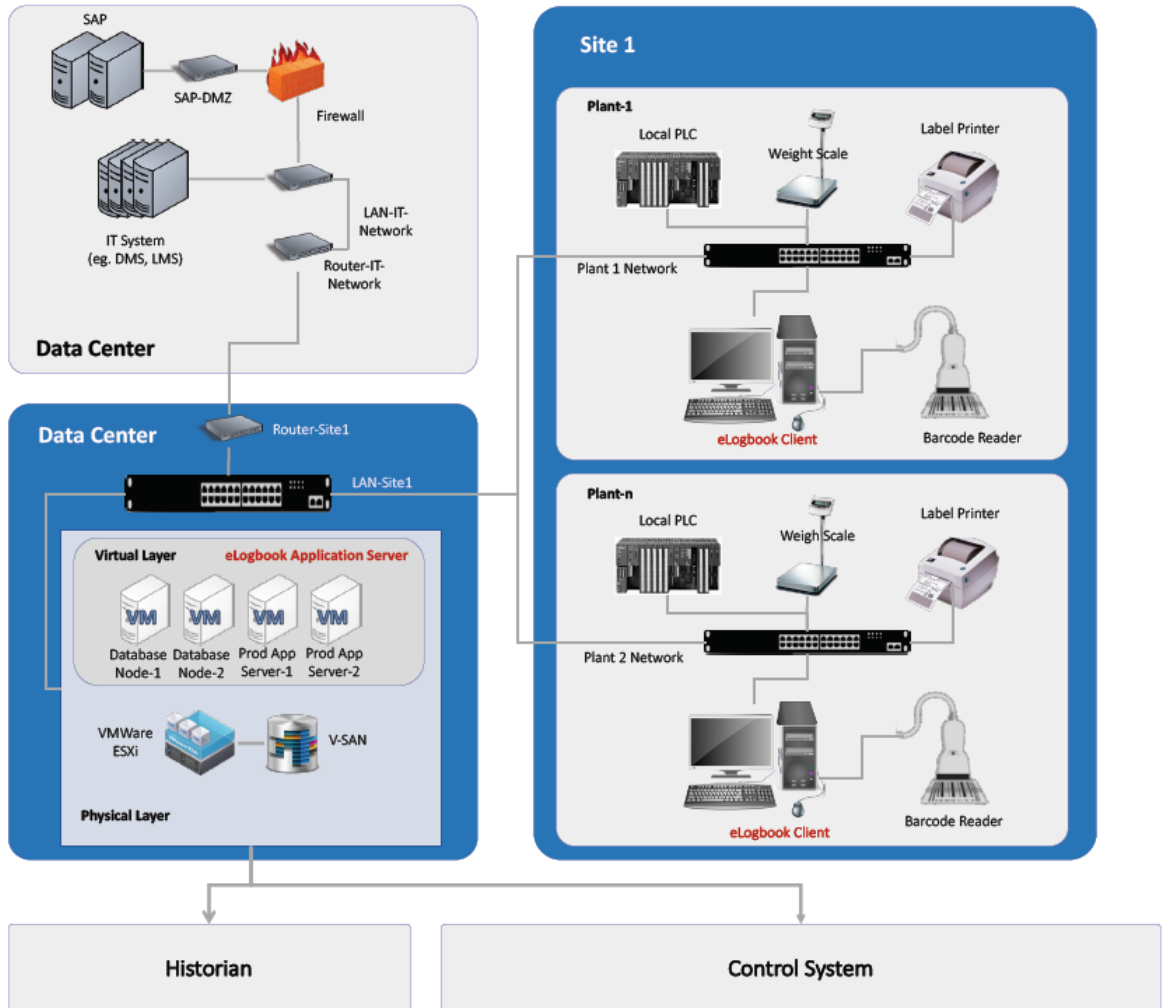
eLogbook consists of an eLogbook Engine, which runs on the server, and several Operator User Interfaces which run as thin clients in a Browser.

Thus, from an installation perspective, eLogbook requires only one installation, which is on the server. The Operator stations only need a Browser.

eLogbook integrates with external IT systems using Webs Services provided by the IT system, with SAP using Webservices or SAP PI Web Services which consume standard SAP BAPI calls and with the Automation system using OPC and the APIs provided by the automation system. Please see below for more details on integration with each of these systems.



Physical Architecture



The eLogbook Application Server runs on a Virtual environment with several nodes. The number of nodes required depends on the selected architecture. The eLogbook application server is configured to sit directly on the plant network and has direct access to all the plant floor devices like control systems, Historian and weigh scales.

The eLogbook UI is a browser based HTML5 thin client, which can be located anywhere in the plant as long as it is on the plant network. The eLogbook machine itself runs eLogbook and the DB Cluster.

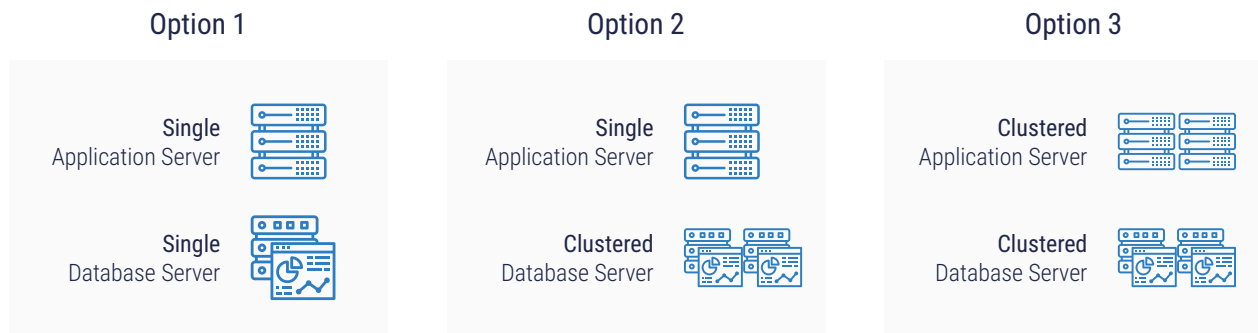
eLogbook communicates with IT systems like SAP, LIMS, and CAPA through the firewall using specific ports that are opened in the network infrastructure, to enable communicating with these systems.

All components of eLogbook (Server and Database) run on a VMWare based virtualized environment.

System Redundancy and High Availability

eLogbook is available in three configurations:

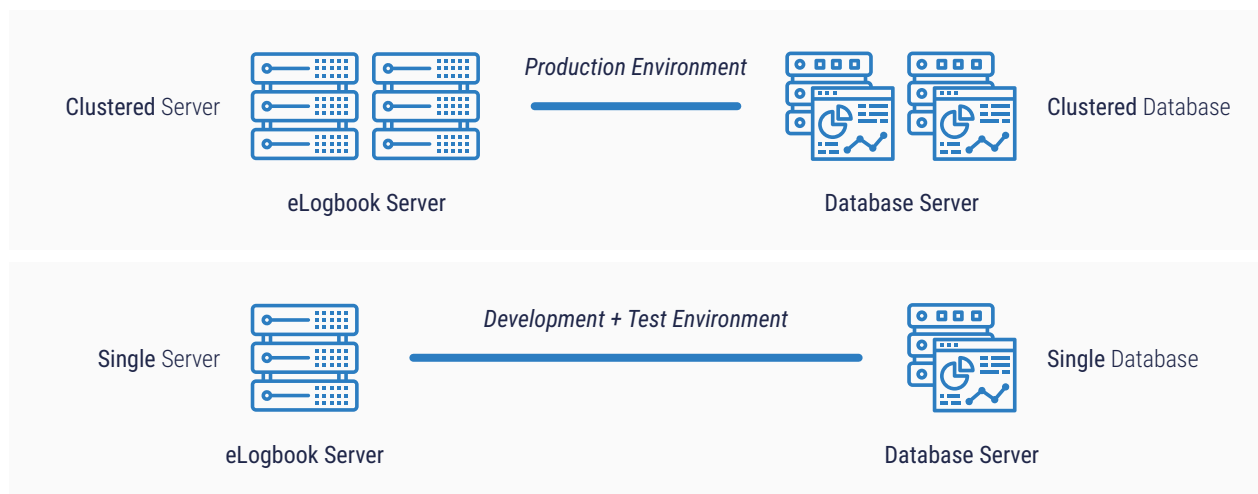
1. Single Application Server and Single Database Server
2. Single Application Server and Clustered Database Server
3. Clustered Application Server and Clustered Database Server



The availability requirements for Development and Test Environments are typically low, and hence these environments do not need to have a high availability configuration, from a cost perspective. The production environment needs to have a high availability.

Hence, we recommend the following system configuration for the eLogbook system.

Recommended Configuration



Note: In case high availability is not required, the production environment can be implemented as Option 2 shown above, which is Single Application Server with Clustered Database. The database should always be clustered to avoid of loss of production data.

Hardware and Software Specifications

Machine	Description/Purpose	Server Type	CPU	RAM	Disk Space
DEV + Test (eLog Server+ Database)	Dev and Test Env for eLog	VMWare	4	24 GB	OS: 100GB + App: 500GB
PRD eLog Server – Cluster 1	Dev and Test Env for eLog	VMWare	8	32 GB	OS: 100GB + App: 500GB
PRD eLog Server – Cluster 2	Prod Env for eLog App Server	VMWare	8	32 GB	OS: 100GB + App: 500GB
PRD Database – Cluster 1	Prod Env for eLog config Database, and execution history. This is part 1 of 2 of a clustered DB.	VMWare	4	32 GB	OS: 100GB + DB: 1TB
PRD Database – Cluster 2	Prod Env for eLog Config Database, and execution history. This is part 2 of 2 of a clustered DB.	VMWare	4	32 GB	OS: 100GB + DB: 1TB

* OS for all servers: Linux Red Hat Enterprise Linux 8.2 or higher / Windows Server 2016 or higher

* All Databases: Postgres / MS SQL

Third party software requirements

Software	Purpose	Version
Linux Sever / Windows Server	Operating System	Linux Red Hat Enterprise Linux 8.2+ / Windows Server 2016 or higher
Java SE Dev Kit 8	Runtime Environment	v221+
VMWare	Virtualization environment	Latest version
PostgreSQL /MS SQL	Application Database	11.3 or higher
Apache Http server	Load Balancing across application servers	2.4x
Any OPC Server	Device Integration using OPC	Latest version

For More Information

Learn more about how Performix eLogbook, can help improve your automated capture of electronic data in the forms and procedures. Contact your Performix Account Manager for more details.

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