

HUMAN HEALTH

ENVIRONMENTAL HEALTH

E-Notebook 18.1

Hardware and Software Guide

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1 Introduction

This document describes the minimum and recommended hardware components required to install E-Notebook application. It also describes the supported and qualified software components to use E-Notebook application seamlessly. The minimum hardware specifications have considerable capacity margin, and unless the system is serving more than 200 users, the infrastructure at minimum specification should be sufficient.

The versions of dependent software that PKI applications were **Qualified** with are also **Supported**. In the **Supported** column, we will only list supported versions (based on software analysis and vendor information) on which the software was not explicitly qualified.

 **Note:** Please note that this guide is for E-Notebook 18.1 only.

2 Hardware Requirements

2.1 Database Server Hardware Requirements

Hardware Component	Minimum Specification	Recommended Specification
Memory (RAM)	8 GB	64 GB
Processor	2 x 2.0 GHz or higher quad core processor (8 cores total)	4 x 3.0 GHz or higher quad core processor (16 cores total)
Free Space Required on Hard Drive	150 GB	250 GB + 1 GB per user per year

2.2 Web Server (Middle Tier) Hardware Requirements

Hardware Component	Minimum Specification	Recommended Specification
Memory (RAM)	4* - 8 GB	16 GB
Processor	2 x 2.0 GHz or higher dual-core processor(4 cores total)	4 x 3.0 GHz or higher dual-core processor(16 cores total)
Free Space Required on Hard Drive	50 GB	100 GB





*More than 4GB RAM is required only for 64-bit systems.

2.3 Client Hardware Requirements

Hardware Component	Minimum Specification	Recommended Specification
Memory (RAM)	4 GB	8 GB
Processor	2 GHz or higher single core processor	3.0 GHz or higher dual core processor
Free Space Required on Hard Drive	10 GB	20 GB


3 Software Requirements

3.1 Required Software for Database

Software	Qualified and Supported	Supported
Operating System	<ul style="list-style-type: none"> Red Hat Enterprise Linux 7.3 Windows Server 2012 Standard (64-bit) Windows Server 2012 R2 Standard (64-bit) Windows Server 2016 Standard (64-bit) 	<ul style="list-style-type: none"> Windows Server 2012 Datacenter Edition (64-bit) Red Hat Enterprise Linux 7 List of Other Oracle 11 G Operating Systems supported List of Other Oracle 12 C Operating Systems supported <p> Note: For Solaris, only SPARC Solaris is supported, Intel Solaris is not supported.</p>
Oracle DB	<ul style="list-style-type: none"> 12.2.0.1.0 Enterprise (64-bit) 12.1.0.2.0 Enterprise (64-bit) <p>Note: Oracle patch.19305116 should be applied on Oracle 12c.</p> <ul style="list-style-type: none"> 11.2.0.4 Enterprise (64-bit) English OS version <p> Note: If you use Oracle Database 11.2.0.4, you must download and apply the Oracle patch 17501296.</p>	<ul style="list-style-type: none"> 12.2.0.1.0 Standard (64-bit) 12.1.0.2 Standard (64-bit) 11.2.0.4 (32-bit and 64-bit) <p> Note: If you use Oracle Database 11.2.0.4, you must download and apply the Oracle patch 17501296.</p>
Oracle Installation	<ul style="list-style-type: none"> Oracle Enterprise Edition 	<ul style="list-style-type: none"> Oracle Standard Edition
Oracle Character Set	WE8MSWIN1252, AL32UTF8 <p> Note: If you have an existing database, you have to edit the Character Set if it does not match the requirement, or you have to create a new instance of Oracle with the convenient Character Set.</p>	
Oracle Features	<ul style="list-style-type: none"> Oracle Text Oracle Call Interface (OCI) Partitioning optional (Oracle Enterprise Only), this is recommended for cartridge performance. 	Pluggable Database from 12C onwards
Oracle Cartridge	<ul style="list-style-type: none"> 15.1.0.88 (with Oracle 11.2.0.4 and Oracle 12.1) 15.1.2.113 (with Oracle 12.2 only) 	
JChem Cartridge	<ul style="list-style-type: none"> 18.25 	

3.2 Required Software for Web Server (Middle Tier)

Software	Qualified and Supported	Supported
Operating System	<ul style="list-style-type: none"> Windows Server 2012 Standard Edition (64-bit) 	<ul style="list-style-type: none"> Windows Server 2012 Datacenter Editions (64-bit)

Software	Qualified and Supported	Supported
	<ul style="list-style-type: none"> Windows Server 2012 R2 Standard (64-bit) Windows Server 2016 Standard (64-bit) 	
Internet Information Services (IIS)	<ul style="list-style-type: none"> IIS 8 IIS 8.5 IIS 10 <p>This should be installed and running on C or D or E or any valid drive, where the installation is intended.</p> <p>To confirm, go to: Control Panel > Administrative Tools > Internet Information Services (IIS) Manager, and make sure that "Default Web Site" is started.</p>	
.NET Framework	<ul style="list-style-type: none"> .NET Framework 4.7.2 	
Network	<p>Net service connectivity to the Oracle database from the Web server.</p> <ul style="list-style-type: none"> Clients must be able to connect to the Web server. All clients must be able to resolve the same name to browse to the Web server. 	
Oracle Client	<ul style="list-style-type: none"> 12.2.0.1.0 (64-bit) 12.1.0.2.0 (64-bit) 12.1.0.2.0 (32-bit) <p> Notes:</p> <p><u>For E-Notebook</u></p> <p><i>You need to install only ODAC (you need not install Oracle Client separately) since install client will be installed along with ODAC.</i></p> <p><u>For COE-ELN</u></p> <p><i>For COE- ELN integrated machine, you need to install Oracle Client and ODAC 32-bit separately on the COE middle tier.</i></p> <p><i>The ODAC version qualified is 12.1.0.1.2 32-bit and 12.2.0.1.0 32-bit.</i></p> <p><i>Oracle Client version is "12.1.0.2.0 32-bit " and 12.2.0.1.0 32-bit</i></p> <p>Note: ODT (Oracle Developer</p>	

Software	Qualified and Supported	Supported
	<i>Tools) component needs to be installed along with ODAC 12.1.0.1.2.</i>	
Oracle Data Access Components (ODAC) includes OLEDB Provider and Oracle Data Provider for .Net	<ul style="list-style-type: none"> • 12.2.0.1.0 (For ELN) • 12.1.0.2.0 (For ELN) • 12.1.0.1.2 (For ELN) • 12.1.0.1.2 32-bit (For COE-ELN) • 12.2.0.1.0 32-bit (For COE-ELN) <p>Make sure that the file "Oracle.DataAccess.dll" is present in the assembly folder under C:\Windows. If the file does not exist in the assembly folder, then separate ODAC installation is required.</p>	
Oracle Client Components (Optional Components for Trouble Shooting)	<ul style="list-style-type: none"> • SqlPlus • SqlLoader • Import Utility (imp.exe) • TNS Names configuration to connect the target Oracle server. 	

3.3 Required Software for Client

Software	Qualified and Supported	Supported
Operating System	<ul style="list-style-type: none"> • Windows 7 Professional SP1 (64-bit) • Windows 8.1 Professional Japanese (64-bit) • Windows 8.1 Professional English (64-bit) • Windows 10 Professional (64-bit) Windows update version 1803 (OS build 17134.407) 	<ul style="list-style-type: none"> • Windows 7 Professional SP1 (32-bit) • Windows 7 Enterprise Japanese SP1 (64-bit) • Windows 7 Enterprise SP1 (English) (64-bit) • Windows 8.1 Enterprise (32-bit and 64-bit) English and Japanese versions • Windows 8.1 Professional (32-bit) English and Japanese versions • Windows 10 Enterprise (64-bit) • Windows 10 Professional (32-bit)
OS - Supported Languages	<ul style="list-style-type: none"> • English (US) • Japanese 	
.NET Framework	<ul style="list-style-type: none"> • NET Framework 4.7.2 	
Microsoft Office	<ul style="list-style-type: none"> • MS Office 2013 Professional Plus (32-bit) • MS Office 2016 Professional Plus (32-bit) • MS Office 2016 Professional Plus (64-bit) • MS Office 2013 Professional Plus (Japanese) (32-bit) • MS Office 2016 Professional 	<ul style="list-style-type: none"> • MS Office 2013 (English) (64-bit) (MSI and C2R) • MS Office 2016 (English) (64-bit) (MSI and C2R) • MS Office 2016 Professional Plus (Japanese) (32-bit) • Office 365 Professional Plus C2R (32-bit) 2013 and 2016 versions

Software	Qualified and Supported	Supported
	Plus (Japanese) (64-bit)	
Internet Browser	<ul style="list-style-type: none"> Internet Explorer 11 Send2ENV2 supports the following browsers: <ul style="list-style-type: none"> Mozilla Firefox: Firefox Quantum 63.0.3 (32-bit) Google Chrome: 70.0.3538.110 (Official Build) (64-bit) Internet Explorer 11: 11.407.17134.0 	
Adobe Acrobat (Standard or Professional) <ul style="list-style-type: none"> For features requiring client-side PDF rendering when Adobe Reader is not present. For in-document signing 	<ul style="list-style-type: none"> Adobe Acrobat Pro DC Continuous (2019.008.20080) Adobe Acrobat Pro DC Classic (2015.006.30456) Adobe Acrobat Pro 2017(2017.011.30105) 	All versions assume the latest patch level has been applied.
Adobe Reader <i>This is required to display PDF content where Acrobat is NOT present.</i>	<ul style="list-style-type: none"> Adobe Acrobat Reader DC Continuous (2019.008.20080) Adobe Acrobat Reader DC Classic (2015.006.30456) Adobe Acrobat Reader 2017 (2017.011.30105) 	All versions assume the latest patch level has been applied.
BioVia Draw	<ul style="list-style-type: none"> 2018 HF1 EE 32-bit (18.1.1.113) 2018 HF1 EE 64-bit (18.1.1.113) 	<ul style="list-style-type: none"> 2017 R2 32-bit 2017 R2 64-bit 2018 EE 32-bit 2018 EE 64-bit
ChemDraw Provided by PerkinElmer during installation	<ul style="list-style-type: none"> ChemDraw ActiveX Enterprise Constant 18.0 	
Design Expert Note: Design Expert is a Design of Experiment (DOE) tool. In E-Notebook, Formulation module optionally supports integration with Design Expert.	<ul style="list-style-type: none"> 9.0 	
GraphPad Prism Note: GraphPad Prism is required if you intend to use Prism Analysis Addin	<ul style="list-style-type: none"> 7.05 	
Reaxys	<ul style="list-style-type: none"> FE Version: Rx2FE-build-8681-prod-iridium BE Version: Rx2BE-build-8150-prod-iridium 	
NuGenesis SDMS Version	<ul style="list-style-type: none"> 7.1 	