IPS

Intelligent Process Solutions

Hardware and Software Requirements:

IPS-ENERGY™

IPS-WebSuite™

IPS-SmartGridDI™

(Release May 2018)

Change History

Version	Date (dd/mm/yyyy)	Chapter and Changes	Name
1.6	09/05/2018	Added Android to section 2.1.4 IPS-MobApp™ Minor corrections	smc
1.5	23/01/2018	In § 2.2 Database Server Configuration \ General recommendations for server configuration \ Microsoft SQL server standard 2017 - Added	vve
1.4	22/12/2017	In § 2.2 Database Server Configuration \ General recommendations for server configuration \ Microsoft SQL server standard 2012 \ Added SP4	vve
1.3	29/03/2017	Added 3.2 Cloud	smc
1.2	24/03/2017	Added 2.1.4. IPS-MobApp™; corrected the section "From 21 to 50 users"; added Studio to IPS-SmartGridDI™	smc
1.1	01/03/2017	Changed the title from IPS-ENERGY™ to IPS-SYSTEMS™	smc
1.0	13/01/2017	Changed the format to new IPS-Document style	smc

Table of Contents

1　General

This document deals with specific hardware and software requirements for using the IPS-SYSTEMS™ applications in client/server environments. This paper will be released on a yearly basis. Please compare your infrastructure on a recurrence frequency with this document. IPS can just guarantee a stable software environment with up to date hardware equipment.

2　Hardware Requirements

2.1　Clients

2.1.1　IPS-ENERGY™

> Windows 7 Professional/Ent/Ultimate (64-bit)

> Windows 8/8.1 (64-bit)

> Windows 10 Home/Pro/Enterprise (64-bit)

> Notebook or PC with Intel Core i5/ i7 processor, 2.8 GHz

> 8 GB RAM (Random Access Memory)

> 1 GB network connection (Standard Cat 5e/6/7 Ethernet)

> 256 GB flash memory (SSD) or 10k SAS/SATA Business drive with a minimum of 150 GB free disk space

> Screen resolution of 1920 x 1080 (wide screen) with 16,7 Million colors; a minimum of 1280 x 800 (wide screen) is required

2.1.2　IPS-WebSuite™

> Windows 7 Professional/Ent/Ultimate (64-bit)

> Windows 8/8.1 (64-bit)

> Windows 10 Home/Pro/Enterprise (64-bit)

> Notebook or PC with Intel Core i5/ i7 processor, 2.8 GHz

> 8 GB RAM (Random Access Memory)

> 1 GB network connection (Standard Cat 5e/6/7 Ethernet)

> 256 GB flash memory (SSD) or 10k SAS/SATA Business drive with a minimum of 150 GB free disk space

> Screen resolution of 1920 x 1080 (wide screen) with 16,7 Million colors; a minimum of 1280 x 800 (wide screen) is required

IPS-WebSuite™ can be used with default browser installations.

We recommend a minimum resolution of 1280 x 800. Please be aware that the hardware configuration can also influence the browser performance.

IPS-WebSuite™ supports the following browsers; including browser support for iPhone, iPad and different kinds of tablets:

> Google Chrome

> Mozilla Firefox

> Microsoft Internet Explorer 11

> Safari

> Opera

2.1.3   IPS-SmartGridDI™ Studio

> Notebook or PC with Intel Core i5/ i7 processor, 2.8 GHz

> 8 GB RAM (Random Access Memory)

> 1 GB network connection (Standard Cat 5e/6/7 Ethernet)

> 256 GB flash memory (SSD) or 10k SATA Business drive with a minimum of 150 GB free disk space

> Screen resolution of 1920 x 1080 (wide screen) with 16.7 Million colours; a minimum resolution of 1280 x 800 (wide screen) is required

> Windows 7 Professional/Ent/Ultimate (64-bit)

> Windows 8/8.1 (64-bit)

> Windows 10 Home/Pro/Enterprise (64-bit)

> Microsoft .NET Framework 4.5

IPS-SmartGridDI™ Studio can also be installed directly on the server.

2.1.4   IPS-MobApp™

> Tablet with iOS 10 or Android

> IPS recommends larger screens for optimized app usage (9.7 inch and larger)

2.2   Database Server Configuration

IPS-ENERGY™ and IPS-SmartGridDI™

General recommendations for server configuration (valid for all types of installations and number of users)

> 64-bit system (Microsoft Windows Server 2012/2012 R2 or 2016)

> Microsoft SQL server standard 2012 SP1, SP2, SP3, SP4, 2014 SP1, SP2, 2016 SP1, 2017

> Redundant power supply (2 x 560 W recommended)

> UPS systems (Uninterruptible Power Supply)

> <u>In case that SmartGridDI™ is installed on the same server where IPS-ENERGY™ is already installed, 8 GB of RAM should be added to the below configuration, and the storage capacity increased by 50%.</u>

Based on the number of users IPS recommends the following server configurations:

From 1 to 20 users

> Intel Xeon E5-4620 v2

> 16 GB DDR 3 Qualified RDIMM Server Memory with address error detection

> 10k SATA Business RAID1/ RAID5/ RAID10 Hot Swap Disks with 4 x 300 GB with a minimum of 300 GB free disk space

> 1 GB network connection (Standard Cat 5e/6/7 Ethernet)

From 21 to 50 users

> Intel Xeon E7-2850 v2

> 32 GB DDR 3 Qualified LRDIMM Server Memory with address error detection

> 10k SATA Business RAID1/ RAID5/ RAID10 Hot Swap Disks with 4 x 300 GB with a minimum of 300 GB free disk space

> Redundant power supply (2 x 560 W recommended)

> 1 GB network connection (Standard Cat 5e/6/7 Ethernet)

From 51 to 100 users

> Intel Xeon E7-8890 v2

> 64 GB DDR 3 Qualified LRDIMM Server Memory with address error detection

> 15k SAS RAID1/ RAID5/ RAID10 Hot Swap Disks with 8 x 300 GB with a minimum of 1.5 TB free disk space

> Redundant power supply (2 x 560 W recommended)

> 2 x 1 GB network connection (Standard Cat 6/7 Ethernet) on 2 separated Ethernet cards or one Fiber Channel connector with up to 10 GB

More than 100 users

For more than 100 users a special configuration fitting your needs has to be built within an installation project. In this case IPS recommend at least multiple SQL Servers and a Fiber Channel Network with a speed up to 10 GB.

2.3   Applications Server Configuration

General recommendations for server configuration (valid for all types of installations and number of users)

> 64-bit system (Microsoft Windows Server 2012/2012 R2, 2016 or 2017)

> Redundant power supply (2 x 560 W recommended)

> UPS systems (Uninterruptible Power Supply)

Following applications can be installed on the applications server:

> IPS-WebSuite™

> IPS-WebServices

> IPS-SGDI Windows Services

> IPS-SGDI WebServices

Minimum hardware requirements for server machine (based on 1-20 users):

> CPU Intel Xeon E5-4620 v2

> 16 GB DDR 3 Qualified RDIMM Server Memory with address error detection

> 10k SATA Business RAID1/ RAID5/ RAID10 Hot Swap Disks with 4 x 300 GB with a minimum of

  150 GB free disk space

> 1 GB network connection (Standard Cat 5e/6/7 Ethernet)

> Windows 2012/2012 R2, 2016 or 2017 Server Standard / Datacenter Edition

Depending on the number of users, follow the scale of the number of users/server hardware configuration of chapter 2.2.

2.4   LAN Infrastructure

In the case of simultaneous synchronization (replication) of large amounts of data, or large numbers of mobile clients a high-speed, non-overloaded LAN is recommended. IPS recommends a network speed of at least 1 GB or higher. For several configurations with high data volume a network speed up to 10 GB can be useful.

2.5   Virtualization

All IPS-SYSTEMS™ products support virtualized infrastructure based on VMWare ESX Hypervisor Technology, Microsoft Hypervisor Technology and Citrix Xen.

Hardware requirements in virtualized infrastructure remains the same. The customer is responsible for respecting the license agreements for virtualized machines.

2.6   General Note

The hardware specifications in this document are based on the available hardware in January 2017. This document will be renewed and adapted to the needs of the IPS-SYSTEMS™ if necessary. Nevertheless, please check this document regularly.

3   Software Requirements

3.1   Operation System

The IPS-SYSTEMS™ applications – IPS-ENERGY™, IPS-WebSuite™ and IPS-SmartGridDI™ – are able to run on one of the following platforms (Windows operating systems on hardware platform x64 are supported only):

3.1.1   Server (only 64-bit)

> Microsoft Windows Server 2008 with Service Pack 2

> Microsoft Windows Server 2008 R2

> Microsoft Windows Server 2012

> Microsoft Windows Server 2012 R2

> Microsoft Windows Server 2016

3.1.2   Clients (only 64-bit)

> Microsoft Windows 7 Professional

> Microsoft Windows 7 Ultimate

> Microsoft Windows 7 Enterprise

> Microsoft Windows 8

> Microsoft Windows 8 Pro

> Microsoft Windows 8 Enterprise

> Microsoft Windows 8.1

> Microsoft Windows 8.1 Pro

> Microsoft Windows 8.1 Enterprise

> Microsoft Windows 10 Home

> Microsoft Windows 10 Pro

> Microsoft Windows 10 Enterprise

Recommended RAM memory for any PC client configuration is a minimum of 8 GB, therefore x64 version of Windows Operating system must be used.

(https://msdn.microsoft.com/en-us/library/windows/desktop/aa366778(v=vs.85).aspx)

NOTE: It is recommended to use the latest available Service Pack for your system.

3.2   Cloud

If the application is hosted on a IPS-ENERGY™ cloud server, each application server must have installed:

> IPS-ENERGY™ application with all prerequisites

> Microsoft Office 2013/2016 or Libre Office software package

> **>**   PDF reader (Adobe reader preferred)

If the application is hosted on a IPS-ENERGY™ cloud server, the client computer must run an application that can be used to connect to Microsoft RemoteApp service.

3.3   Database

The IPS-ENERGY™ application is based on the relational database management system (RDBMS) Microsoft SQL Server 2012. The SQL Server 2012 Standard edition must be installed on the server computer (or Enterprise Edition for easier database administration, or in case of large numbers of users (>80-100) and large amounts of data (>50 GB)).

3.4   Mobile Clients

In a mobile client/server scenario the IPS-ENERGY™ database, located on the SQL Server, will be replicated to the client for application offline usage. To do so a local database must be installed on the client. For an efficient future system administration and performance, IPS recommends to install SQL Server 2012 Standard Edition on the client computer.

For exceptional cases, as small data size, or a temporary project development period, the SQL Server 2012 Express Edition can be used. The Express Edition is limited by Microsoft License Policy to 10 GB of data volume. In case of running a system with SQL Server Express Edition, the local IPS-ENERGY™ installation will stop working when exceeding 10 GB data. In this case it may come to data loss on the client computer (impossible synchronization). The SQL installation on the server has to be the same as on the local machine. (For merge publication the subscriber version must not exceed the publisher version.)

3.5   Network (Desktop Clients)

The IPS-ENERGY™ client software without a local database installation requires an SQL Server Native Client installation.

3.6   Client Access Rights

The IPS-ENERGY™ user management is based on the pre-existing management capabilities of Active Directory and/or Windows Server domain. Additionally, MS SQL Server access roles are used. A specific domain user account is required with a permanent password used by the SQL Server Agent on the server.

For the functionality of the initial replication snapshot distribution in client/server environments a public shared directory with read-only access rights for the IPS-ENERGY™ users is needed on the computer where the central SQL Server is installed.

3.7   Windows Firewall

For all computers which participate in the database replication (all client computers with a local database and the server computer) the TCP/IP communication using the default TCP/IP port 1433 defined for SQL Server default instance must be ensured.

This means that either the SQL Server service or the TCP/IP port 1433 must be added to the Windows Firewall exception list, if the Windows Firewall is enabled. In case another software or hardware-based firewall is installed the appropriate settings must be set as defined above.

3.8   NET Framework

The IPS-ENERGY™ software uses and requires the .NET Framework 2.0.

The .NET Framework 3.0 installed with Microsoft Windows Vista and the .NET Framework 3.5 are fully compatible with .NET Framework 2.0.

For the IPS-WebSuite™ and IPS-SmartGridDI™ .NET Framework 4.0 is required only on the server side.

3.9   Internet Browser

The internet browser must support PNG transparency in order to view the help files correctly. Microsoft Internet Explorer 9 installation is recommended.

NOTE:	Internet Explorer 11 and Non-Microsoft browsers like Firefox, Opera, and Chrome are supporting PNG transparency as well.

3.10   OMICRON SW & CAPE NI Application

This only applies to client machines: OMICRON TU 2.21 software version is required for all RELEX™ users with OMICRON test technology (please ask for the current version). The compatibility with newer versions could be set upon request.

Computers which use the CAPE NI application have to have Microsoft Access 2007 or higher installed.

Appendix

Example of the IPS-SYSTEMS™ Development Environment

Server 1 – Database Server:

SQL Server for following databases (single instance):

DEV instance

> IpsEnergy (DB_DEV)

> SGDI_configuration (DB_DEV)

> SGDI_DI (DB_DEV)

Server 2 – Application Server:

Application Server with the following IPS components installed:

> IPS-WebSuite™

> IPS-WebServices

> SGDI Windows Services

> SGDI Web Service

Example of the Development, User Acceptance Test and Production Environment

To install the complete DEV/UAT/PROD environment, the recommendations are:

Server 1 – Database Server: DEVELOPMENT and UAT

DEV instance

> IpsEnergy (DB_DEV)

> SGDI_configuration (DB_DEV)

> SGDI_DI (DB_DEV)

UAT instance

> IpsEnergy (DB_UAT)

> SGDI_configuration (DB_UAT)

> SGDI_DI (DB_UAT)

Server 2 – Application Server: DEVELOPMENT

> IPS-WebSuite™

> IPS-WebServices

> SGDI Windows Services

> SGDI Web Service

Server 3 – Application Server: UAT

> IPS-WebSuite™
> IPS-WebServices
> SGDI Windows Services
> SGDI Web Service

Server 4 – Database Server: PRODUCTION

PROD instance

> IpsEnergy (DB_PROD)
> SGDI_configuration (DB_PROD)
> SGDI_DI (DB_PROD)

Server 5 – Application Server: PRODUCTION

> IPS-WebSuite™
> IPS-WebServices
> SGDI Windows Services
> SGDI Web Service