SIEMENS

Desigo™ CC

Configuration Manual for Windows Embedded Hardware

Configuration

Building Technologies

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About this Document

Purpose

This manual describes the Desigo CC BA Compact Edition and gives the reader an overview of the system characteristics, the hardware, software requirements, the system limits and so on. It provides an overview to the supported system connectivity and the recommended system configurations.

Scope

This document applies to Desigo CC Version 3.0 Extension Pack 1.

Target Audience

Project Engineers are responsible for planning and configuring a customer project. They provide the parameterization of products, devices, and systems and are responsible for general system troubleshooting. They have the training appropriate to their function and to the products, devices, and systems to be configured. They are familiar with the applied operating system(s) and the related network environment.

Field Engineers provide the basic installation of devices and systems for a specific customer at the customer site. They have the training appropriate to their function and to the products, devices, and systems to be installed. They are also familiar with the applied operating system(s) and the related network environment. Field engineers are responsible for infrastructure troubleshooting (for example, hardware, communication, network, and so on).

Librarians are application experts who are in charge of creating specific system profiles for a market segment, channel, or region. They coordinate the use of the advanced tools that permits the customization of the management station libraries for specific uses. They have the training appropriate to their function and to the products, devices, and information to be configured.

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Liability Disclaimer

We have checked the contents of this manual for agreement with the hardware and software described. Since deviations cannot be precluded entirely, we cannot guarantee full agreement. However, the data in this manual are reviewed regularly and any necessary corrections included in subsequent editions. Suggestions for improvement are welcome.

Product Security Disclaimer

Siemens products and solutions provide IT-specific security functions to ensure the secure operation of building comfort, fire safety, security management and physical security systems. The security functions on these products and solutions are important components of a comprehensive security concept.

However, it is necessary to implement and maintain a comprehensive, state-of-the-art security concept that is customized to individual security needs. Such a security concept may result in additional site-specific preventive action to ensure that the building comfort, fire safety, security management or physical security systems for your site are operated in a secure manner. These measures may include, but are not limited to, separating networks, physically protecting system components, user awareness programs, in-depth security, and so on.

For additional information on building technology security and our offerings, contact your Siemens sales or project department. We strongly recommend signing up for our security advisories, which provide information on the latest security threats, patches and other mitigation measures.

http://www.siemens.com/innovation/en/technology-focus/siemens-cert/cert-security-advisories.htm

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Getting Help

For more information about the Desigo CC products, contact your local sales representative.

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Safety Messages According to ANSI Z535.6

ANSI standard safety messages are used throughout Help to make you aware of important information. ANSI distinguishes between *property damage* messages and *personal injury* messages.

- The property damage message has this label: NOTICE.
- The personal injury messages have these labels: CAUTION!, WARNING!, DANGER!

Examples:

!	*NOTICE*
	Property Damage Warning Message
	Equipment damage or loss of data may occur if you do not follow a procedure or instruction as specified.

⚠	⚠ CAUTION
	Caution Safety Message
	Minor or moderate injury may occur if you do not follow a procedure or instruction as specified.

⚠	⚠ WARNING
	Warning Safety Message
	Personal injury or property damage may occur if you do not follow a procedure as specified.

⚡	⚠ DANGER
	Danger Safety Message
	Electric shock, death, or severe property damage may occur if you do not perform a procedure as specified.

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Document Revision History

Document Identification
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Document Revision History		
Modification Index	Edition Date	Brief Description
a	2018-01-30	V3.0 Extension Pack 1 Edition

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1 Overview

Desigo CC has been proved to work on a Windows embedded as well as on the desktop computer. The document describes the requirements for the Windows embedded hardware. In order to perform this test Desigo CC Building Automation (BA) Compact product has been used.

The Desigo CC BA Compact product presents a slim and simple management station that operates and monitors a single building discipline, such K12 schools, branch offices, food chain stores, town halls, museum, family hotels and other small commercial or industrial buildings. It can be installed on an embedded Windows PC and can be operated and monitored using a Web/Windows App Client on separate hardware. It is tailored for small-to-medium sized Client-Server configurations, operating with a maximum 10,000 system objects.

The Desigo CC BA Compact product allows to:

- Graphically operate and monitor the building automation system
- Detect, visualize, and acknowledge/reset faults and alarms
- Collect, visualize, and compare online and offline Trend data
- Create schedules to automate the operation of the building and set up exceptions overriding the regular schedules
- Compose and configure report definitions to produce a variety of performance reports for the building
- Store and retrieve system activity data, view data logs
- Create and execute automated reactions between the networked systems
- Send out automatic remote notifications via email, SMS, and pagers
- Maintain extensive amounts of historic data online, providing support for project data archiving (values, events, activities, incidents) in the Long Term Storage (LTS)
- Create a backup of the project
- Communicate with field network devices to monitor and command information by using the following standard protocols:
  – BACnet
  – OPC DA (Data Access)
  – Modbus TCP
- Let external applications to read and write real time data as well as access events or historical values by using the provided REST (Representational State Transfer) web service interfaces. Web Services can be used for applications such as Enterprise Software, Energy Management services, Facility Management systems or Mobile Apps. (max 5 applications)

2 Hardware Specification

In the table below, two examples of embedded configuration where Desigo CC has been tested are listed.

The Desigo CC BA Compact can be configured on any equivalent hardware configuration.

Category	SIMATIC (customized model: IPC227E)	Advantech (customized model: ARK-1123H-3S51)
CPU	1.83 GHz Intel Celeron N2930 http://w3.siemens.com/mcms/pc-based-automation/en/industrial-pc/box-pc/simatic-ipc227e/Pages/Default.aspx Siemens DF Industry-Mall order number: 6ES7647-8BB31-7BA1	2.0 GHz Intel Celeron 4C J1900 http://buy.advantech.eu/Embedded-Computers/Embedded-Box-PC-Series-ARK-Ultra-Slim/ARK-1123H-3S51/system-21386.htm
Memory	8 GB	8GB
Hard Disk	Size: 80 GB SSD	Size: 64 GB SSD
Network Card	Onboard 2 x Gigabit-Ethernet, 1 x PROFINET (real-time via standard Ethernet)	LAN #1 10/100/1000 Mbps Intel I210 GbE, support Wake on LAN LAN #2 10/100/1000 Mbps Intel I210 GbE, support Wake on LAN
Graphic Card	Optional PCI Express x 16 graphics card and onboard graphics	Graphics card integrated with processor
Monitor (external)	Size: 22'', Full HD Resolution: 1920x1080	Size: 22'', Full HD Resolution: 1920x1080
Use for Server	Up to 10.000 system objects	Up to 10.000 system objects
Use for Remote Web/Web App Client	Yes (max 3)	Yes (max 3)
Use for FEP	No	No
Use for Remote Web Server	No	No
Use for Remote SQL Server	No	No

3 Disk Space Requirement

Category	Minimum Required Disk Space (GB)	Spare (GB)	Total (GB)
Win10 IoT Enterprise 2016 LTSB	17	5	22
HDB with Default Size (3 GB) Can be increased based on disk space availability	3	6 (Transaction Log) 1 (Backup and recovery log) 7 (Total)	32
Virtual Memory	8		40
Desigo CC Setup	10		50
Desigo CC Installation + EMs	4		54
Program Data, Files and User	4	4	62
Total required Disk Space			62

NOTE:
Disk space for EMs may slightly vary in case of Desigo CC DMS Compact distribution.

4 Software Requirements

Operating System
- Win10 IOT Enterprise 2016 LTSB

SQL
- Microsoft SQL Server 2014 - Express Edition

Extension Modules

The following information is exemplified for BA use case. In case of others such as Danger Management System (DMS) the features, limitations, and license requirements may be different. Contact your local sales support for more information.

- BACnet Standard
- BAS_Common
- BA_Modbus
- Modbus
- Web Services
- BAS_EN
- Desigo PX
- Desigo System
- Desigo TRA
- iBASE
- Node Map
- Scripting

Languages
- en-US (default), max 4

Project Template
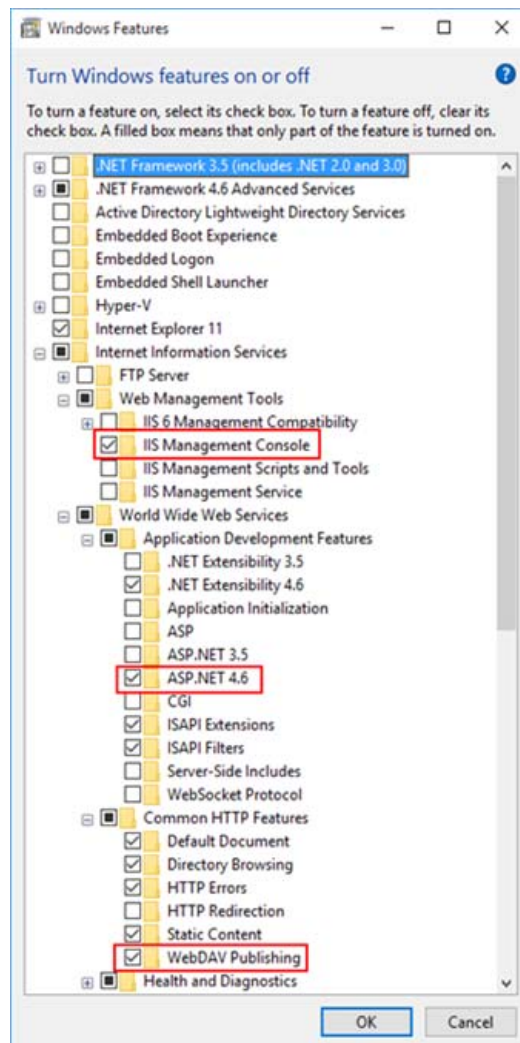- BA_EN_Template_Compact (will be available in V3.0 EP2)

HDB
- Size: 3 GB (max)
  As on embedded Windows 10 PC the disk size is limited. Thus during HDB creation, the database size should not exceed the recommended maximum of 3 GB.
  If database size is 3 GB, it will require a total 10 GB of disk space (6 GB for the Transactional Log and 1 GB for the Backup and Recovery Log). However, if more space is available, the database size can be increased to up to 10 GB. The configuration of number of long term storage group depends on the available space on the embedded PC / SQL server PC.

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5 Installing and Configuring IIS on Windows 10 IoT

For embedded hardware configuration only Web Client connectivity is supported. Hence you must install and configure IIS according to the following instructions.

IIS configuration must be done before performing Desigo CC installation.

1. Right-click on the Windows **Start** menu.

2. Select **Control Panel > Programs and Features > Turn Windows features on or off**.

    ⇨ The **Windows Features** dialog box displays.

3. Expand the **Internet Information Services** check box.

4. Expand **Web Management Tools** and select **IIS Management Console**.

5. Expand **Internet Information Services > World Wide Web Services > Application Development Features**, and select the **ASP.NET 4.6** check boxes (this automatically checks other relevant boxes).

6. Expand **Internet Information Services > World Wide Web Services > Common HTTP Features**, and select the **WebDAV Publishing** check box (this automatically checks other relevant boxes).
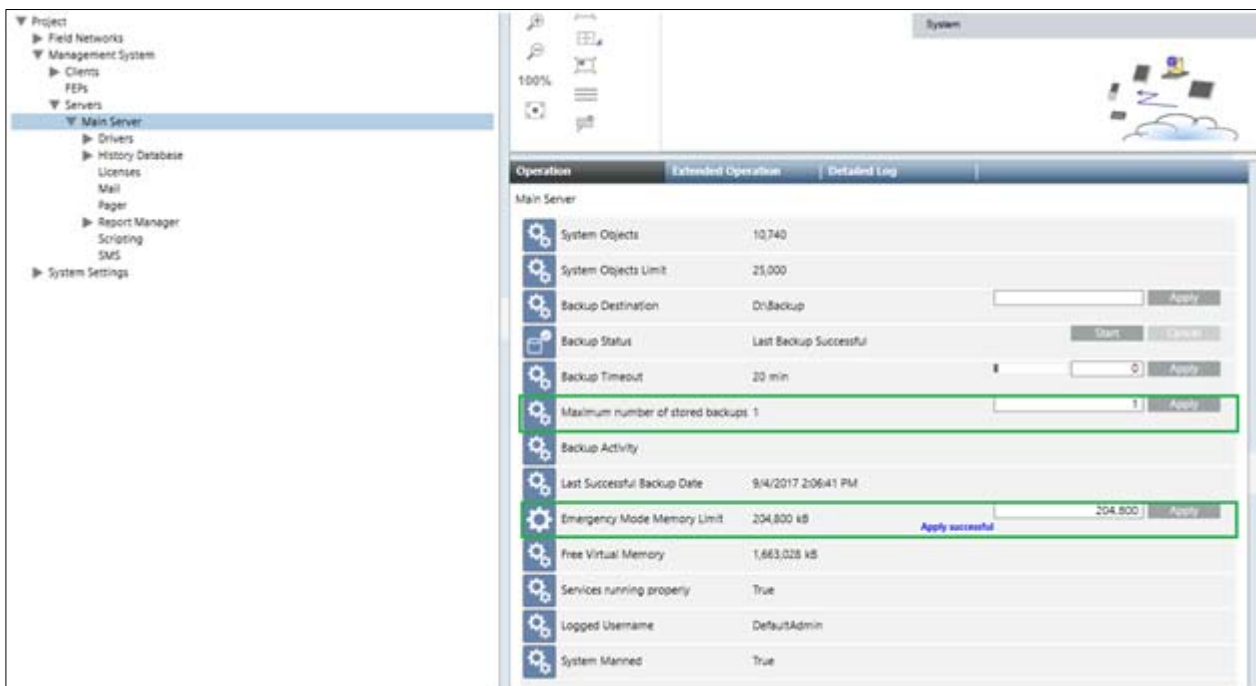

7. Click **OK** and restart the computer.

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6 Configuring a Project Backup/Template

You need to configure the project backup settings in order not to exceed the recommended disk space. We recommend using the standard HQ template BA_EN_Template_Compact provided with distribution media. Otherwise, you need to configure the project backup with the following settings.

▷ You are compliant with the hardware and software requirements for an embedded system.

▷ To backup the project, the project must be started.

1. In **System Browser**, select **Management View**.

2. Select **Project > Management System > Servers > Main Server**.

3. In the **Extended Operation** tab, set the following properties:

   – **Emergency Mode Memory Limit**: Set to 204,800KB (~200mb) or in range of 200mb.
   The Desigo CC client will not open if no sufficient free memory is available. Click **Apply**.

   – **Maximum number of stored backups**: Set to 1 if project size is bigger and disk space is less. (You also perform this on embedded PC after restoring the project). Click **Apply**.

4. If you want to perform the project backup, click **Start**.

⇨ When the backup is successfully completed, the project backup becomes available on the server at the **Backup Destination** path.

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7 Setting up Compact system on Windows 10 IoT

▷ Windows 10 IoT installation is completed successfully.

▷ You have installed and configured IIS on Windows 10 IoT [➙ 12].

1. Install Desigo CC Server setup with required set of EMs, language packs (en-US is default) needed.

   – BACnet Standard
   – BAS_Common
   – BA_Modbus
   – Modbus
   – Web Services
   – BAS_EN
   – Desigo PX
   – Desigo System
   – Desigo TRA
   – iBASE
   – Node Map
   – Scripting

2. Launch SMC.

3. In the SMC tree, select Projects and click **Create Project from Template** and select a project from a project template **BA_EN_Template_Compact**.

4. Upgrade the restored project and start it.

5. Create a HDB, with a maximum size of 3GB.
   NOTE: You may consider reducing the HDB size to 2 GB if you want to configure other applications.
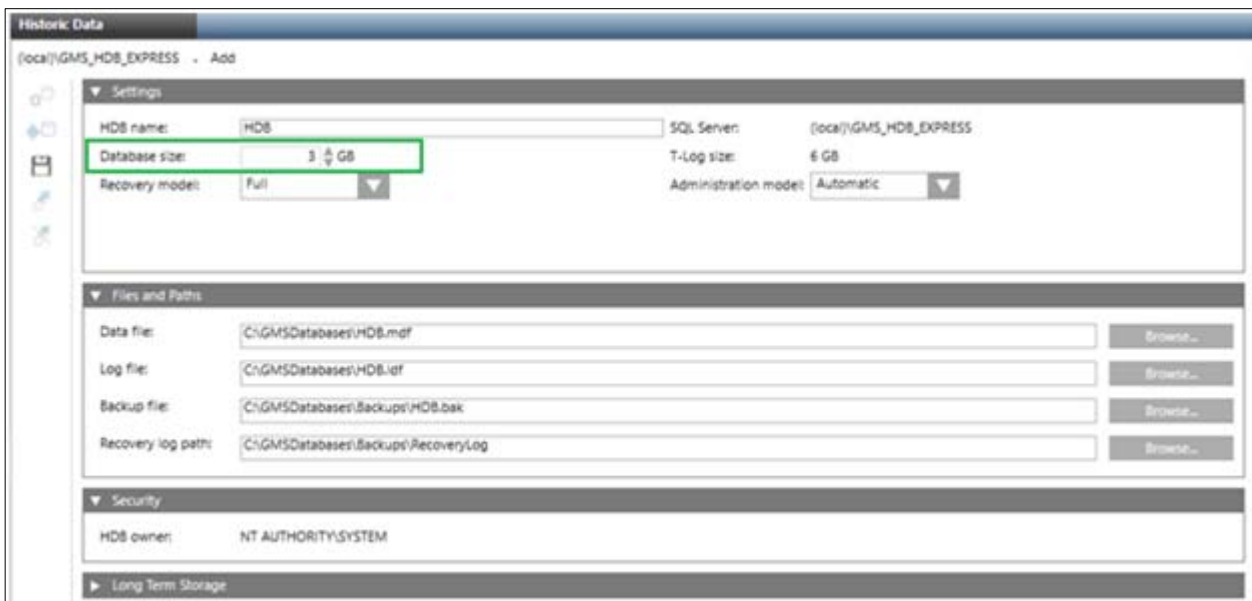
6. Link the HDB to the project that you restored and upgraded.

7. Create a website and a Web Application.

8. Copy the Web Application certificates (root, host) from the Desigo CC Compact computer to the one where you will run the Web App/Windows Client.

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NOTE: If you use the Silent installation for installing Desigo CC, then you must use the self-signed certificate for web site and web application creation. Currently Silent installation only supports self sign certificate for website and hence mobile app will not work as it requires root-host certificate combination configured with website of WSI web application.

9. Copy the Web Application URL of the Web Application from the Desigo CC Compact computer and paste it into the browser of the one where you will run the Web App/Windows Client.

10. Launch the Web App/Windows Client.
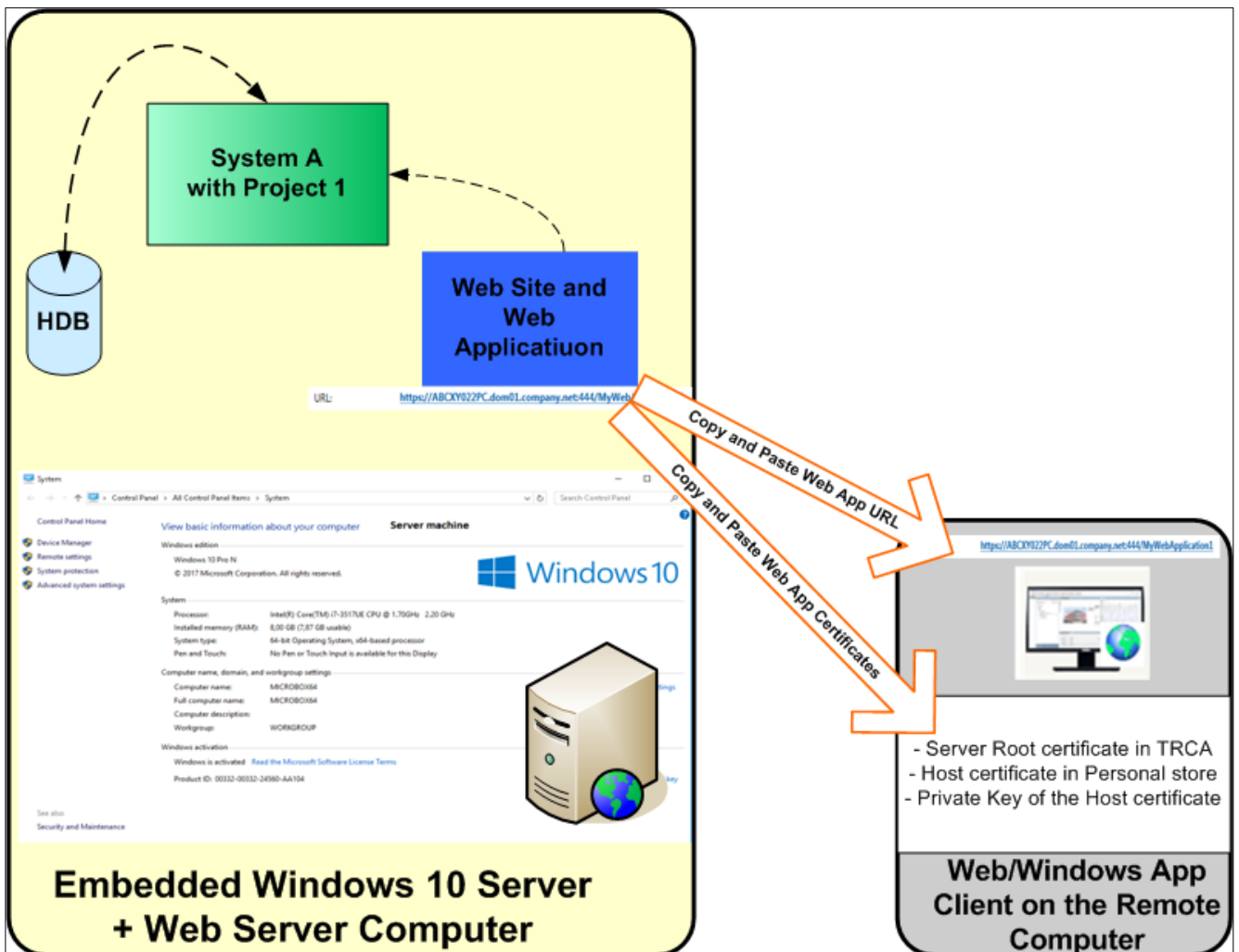
NOTE1:
Engineering performance on embedded hardware is limited. Project engineering on a workstation may be more effective.
NOTE 2:
Do not leave the Desigo CC setup on the SSD.