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|  | **imotion** |
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|  | System Manager Documentation |
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**Modification management**

|  |  |  |  |  |  |
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| **Version** | **Date** | **Name** | **Dept.** | **Modifications** | **State** |
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| 1.1 | 2014-10-23 | RAN | SW | Added example usages chapter 4 | draft |
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**Review**

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| 0.1 | 2014-06-19 | WES | SW | Reviewed, OK. |
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**Release**

|  |  |  |  |  |
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| **Version** | **Date** | **Name** | **Dept.** | **Remarks** |
| 1.0 | 2014-06-19 | WES | SW | Version matching System Manager 2.2.1426 |
|  |  |  |  |  |
| 2.0 | 2014-11-10 | WES | SW | Version matching System Manager 2.4.1445 |
|  |  |  |  |  |

# Introduction

## System Manager Version

C:\Users\wes\AppData\Local\Microsoft\Windows\INetCache\Content.Word\systemmanager.emfThis document covers System Manager version **2.4.1445**.

## Purpose

The goal of this document is to describe in detail each System Manager parameter in order to configure it properly.

At the end of this document, the reader will have all the details to configure System Manager.

## Intended Audience

This document is addressed to product managers or customer project managers that are familiar with this product and are able to install, operate and maintain it.

# System Overview

The System Manager is the main application that controls all the other applications on the system. The System Manager can be configured to start, monitor and close applications on the system. This is a software component that must be part of every system. System Manager is usually started automatically by the OS.

The different applications of the system communicate with System Manager via Medi. The System Manager is also responsible for monitoring the hardware and interacting with some specific hardware like the “Ignition” and “Watchdog” management.

# Configuration

The System Manager requires configuration in order to operate correctly with the selected hardware and the applications. The file for configuration is **“SystemManager.xml”**. System Manager also required “**NLog.config**” for logging and **“medi.config”** for the Medi configuration.

## Global configuration conventions

All our configuration files follow some conventions.

### Durations and time intervals

All durations and time intervals are configured using the XSD duration format.

The time interval is specified in the following form "PnYnMnDTnHnMnS" where:

* P indicates the period (required)
* nY indicates the number of years
* nM indicates the number of months
* nD indicates the number of days
* T indicates the start of a time section (required if you are going to specify hours, minutes, or seconds)
* nH indicates the number of hours
* nM indicates the number of minutes
* nS indicates the number of seconds (decimal numbers are allowed)

Examples:

* 1 year = P1Y
* 1 day 6 hours = P1DT6H
* 10 seconds = PT10S
* 400 milliseconds = PT0.4S

## @XmlDoc(xsd=...\..\..\Common\Configuration\Source\SystemManager\SystemManager.xsd;xml=..\Deploy\Config\Basic\PC-2\SystemManager\SystemManager.xml)

# System Manager Example usages

## Splash screen example usages

The System Manager Splash screen can be configured to be shown and hidden for different reasons. The items shown on a specific splash screen can also be configured. Any number of splash screens can be configured in SystemManager.xml.

### Splash screen with “Button“ press example usage

The “Button“ is the physical button present only on the InfoVision PC-2 hardware. This can be configured for the System Manager on the InfoVision Quadro TFT too in a Master-Slave set-up with a PC-2.

Below is an example of a splash screen configured to be shown when the Button is pressed once and its value is 1 and the splash screen is hidden when the Button is pressed again and its value becomes 0.

<SplashScreen Name="Button" Enabled="true" Foreground="Black" Background="#E6ECF0">

<ShowOn>

<Input Unit="\*" Name="Button" Value="1" />

  </ShowOn>

  <HideOn>

    <Input Unit="\*" Name="Button" Value="0" />

  </HideOn>

  <Items>

    <Logo />

    <System MachineName="true" Ram="false" Cpu="false" Uptime="true" Serial="true" />

    <Network Name="true" Ip="true" Gateway="false" Mac="true" Status="false" StatusFilter="Up" />

    <Applications Version="true" State="true" Ram="false" Cpu="false" Uptime="true" LaunchReason="false" ExitReason="false" />

   </Items>

</SplashScreen>

Below is an example of a splash screen configured to be shown when the Button is pressed once and its value is 1 and the splash screen is hidden after a configured timeout.

<SplashScreen Name="Button" Enabled="true" Foreground="Black" Background="#E6ECF0">

<ShowOn>

<Input Unit="\*" Name="Button" Value="1" />

  </ShowOn>

  <HideOn>

    <Timeout Delay="PT60S" />

  </HideOn>

  <Items>

    <Logo />

    <System MachineName="true" Ram="false" Cpu="false" Uptime="true" Serial="true" />

    <Network Name="true" Ip="true" Gateway="false" Mac="true" Status="false" StatusFilter="Up" />

    <Applications Version="true" State="true" Ram="false" Cpu="false" Uptime="true" LaunchReason="false" ExitReason="false" />

   </Items>

</SplashScreen>

The Button is configured in the HardwareManager.xml example as seen below. **The “Name” attribute of the Input in SystemManager.xml must match the name specified for the “Button” in HardwareManager.xml.**

<Mgi Enabled="true">

  <PollingInterval>PT0.1S</PollingInterval>

  <GPIO />

  <Button>Button</Button>

</Mgi>

### Splash screen with Hotkey press example usage

The splash screen can be configured to be shown upon a Hotkey press and hidden when the Hotkey is pressed again. This must be configured on each System Manager Splash screen and it works on that system it is configured for. The configuration requires specifying the Key to be pressed to show/hide the splash screen. **When using, the user must press the configured key along with the “Windows” key (Win + Hotkey) for show/hide the splash screen.**

<SplashScreen Name="HotKey" Enabled="true" Foreground="Black" Background="#E6ECF0">

<ShowOn>

<HotKey Key="S" />

  </ShowOn>

  <HideOn>

    <HotKey Key="S" />

  </HideOn>

  <Items>

    <Logo />

    <System MachineName="true" Ram="false" Cpu="false" Uptime="true" Serial="true" />

    <Network Name="true" Ip="true" Gateway="false" Mac="true" Status="false" StatusFilter="Up" />

    <Applications Version="true" State="true" Ram="false" Cpu="false" Uptime="true" LaunchReason="false" ExitReason="false" />

   </Items>

</SplashScreen>

### Splash screen upon start-up, shut-down etc example usage

The splash screen can be configured to be shown upon start-up, shutdown and hidden when an application starts running. This must be configured on each System Manager Splash screen and it works on that system it is configured for.

<SplashScreen Name="Boot" Enabled="true" Foreground="Black" Background="#E6ECF0">

<ShowOn>

<SystemBoot />

    <SystemShutdown />

  </ShowOn>

  <HideOn>

    <ApplicationStateChange Application="DirectXRenderer" State="Running" />

  </HideOn>

  <Items>

    <Logo />

    <System MachineName="true" Ram="false" Cpu="false" Uptime="true" Serial="true" />

    <Network Name="true" Ip="true" Gateway="false" Mac="true" Status="false" StatusFilter="Up" />

    <Applications Version="true" State="true" Ram="false" Cpu="false" Uptime="true" LaunchReason="false" ExitReason="false" />

   </Items>

</SplashScreen>

In the above example, the splash screen is configured to be hidden when the application “DirectXRenderer” is in the **State** “Running”. The different states of an application can be seen in the configuration section of the document in 3.2. The user can configure the <ApplicationStateChange> to show or hide the splash screen using any application and state of the application.

## System configuration example usages

The section to configure the system in the SystemManager.xml covers aspects like, Actions to perform when the system reaches a configured RAM limit, CPU limit or Disk space limit. If the user does not want to the CPU limit, RAN limit or Disk space limit to be checked and the actions performed, then, can set the **“Enable”** attribute to **“False”** for that configuration.

### CPU Limit example usage

Below is an example for CPU limit usage which specifies that when the system reaches 98% CPU usage the first time, System Manager performs the **first action** in the list which is to Relaunch the application DirectXRenderer. When the system reached 98% CPU usage the second time, the **second action** in the list, which is to reboot the system, is performed. If the CPU limit of 98% usage is reached again, the system performs the first action in the list and this cycle continues.

<CpuLimit Enabled="true">

  <MaxCpuPercentage>98</MaxCpuPercentage>

  <Actions>

<Relaunch Application="DirectXRenderer"/>

    <Reboot/>

  </Actions>

</CpuLimit>

### Disk space Limit example usage

Below is an example for the Disk space limit usage, where there are two sections configured. The first <Disk> configuration checks the **Path** attribute which is the C drive. When the free space in drive has reached 5Mb, the actions configured are performed, which in this example is to reboot the system.

The second <Disk> configuration checks the **Path** attribute which is the D drive. Here, two conditions are configured. One is <FreeSpaceMB> and the other <FreeSpacePercentage>. Then, when either of the conditions is reached, the actions configured are performed, which in this example is to **purge** or delete the files (not the directory) at the specified path in the **Path** attribute.

<DiskLimits Enabled="true">

   <Disk Path="C:\" Enabled="true">

      <FreeSpaceMB>5</FreeSpaceMB>

      <Actions>

        <Reboot/>

      </Actions>

   </Disk>

   <Disk Path="D:\" Enabled="true">

      <FreeSpaceMB>10</FreeSpaceMB>

      <FreeSpacePercentage>5</FreeSpacePercentage>

      <Actions>

        <Purge Path="D:\temp\"/>

        <Purge Path="D:\log\archives\"/>

      </Actions>

    </Disk>

</DiskLimits>