



Infor Care Workloads Hardware Recommendations

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Introduction

Infor is the world's leading provider of patient dependency and staff workload analysis solutions. Infor has created actionable business solutions aimed at improving quality patient care. By combining over 30 years of patient quality workload information with the respected GRASP® Methodology, over 800 hospitals worldwide have embraced the solution as a standard operating practice.

Infor has developed the software application to enable swift data collection and accurate data analysis. Infor Care Workloads is a one-of-a-kind solution that not only supports the GRASP® Methodology but also incorporates it into a single easy-to-use solution.

This document outlines required software and recommended hardware to support Infor Care Workloads.

Server(s)

Virtual Server

Infor Care Workloads may be installed on a virtual server such as VMWare Server or Microsoft Hyper-V Server. Infor recommends against the use of virtual servers for databases due to performance issues that have been noted by clients that have been directly attributed to the use of a virtual server.

Dedicated & Shared Servers

Infor highly recommends that the database server be dedicated to the Infor Care Workloads database. The architecture of Infor Care Workloads extensively utilizes SQL Server Stored Procedures and User Defined Functions for much of the application's business logic. As such the demands placed on the SQL Server are elevated.

The Infor Care Workloads Application Server may be shared with other applications as needed.

Server Software

Operating System

Infor Care Workloads utilizes Microsoft SQL Server, Internet Information Services, & custom Windows Services all of which require a Microsoft Windows operating system. Infor supports all Windows Server operating systems that are capable of running the software referenced in the following sections. These operating systems include:

- Windows Server 2008 Standard 64-Bit
- Windows Server 2003 Standard 64-Bit

Both 32 & 64 Bit versions of these operating systems are supported, however Infor recommends the 64-Bit version to support additional memory. Infor does not recommend the "Enterprise" edition unless a Failover Cluster is planned to be implemented.

Database

Infor Care Workloads utilizes all components of Microsoft SQL Server including:

- Database Services
- Integration Services
- Analysis Services
- Reporting Services

Infor Care Workloads has been designed utilizing **Microsoft SQL Server 2005**, and has been tested to ensure compatibility with **Microsoft SQL Server 2008** and **Microsoft SQL Server 2012**. Both 32 & 64 Bit versions of Microsoft SQL Server are supported. Infor recommends the “Standard” or “Enterprise” edition of Microsoft SQL Server. The “Enterprise” edition provides some performance benefits over the “Standard” edition, primarily in allowing more on-line operations. Infor recommends licensing “Per Socket” rather than “Per User”.

Web Server

Infor Care Workloads is a web application distributed via **Microsoft Internet Information Services**. IIS is a component of the Windows Server operating system and versions will vary based on the installed operating system. Infor supports all current versions of IIS.

Other

Infor Care Workloads is a web application that utilizes the advanced functionality offered by the **Microsoft .Net Framework 4.0**. Infor Care Workloads also utilizes the **Microsoft .Net Framework 1.1** for the Infor Care Workloads Administration Console and the Infor Care Workloads HL7 Interface service. Each version of the Microsoft .Net Framework functions independently of other versions such that each of these versions needs to be installed separately.

Recommended Minimum Server Hardware Configurations

The following minimum server hardware recommendations are provided as a guideline to aid in selecting hardware to provide optimal performance for Infor Care Workloads in varying sized facilities. Recommendations have been listed based on estimated number of Patients per Day. Other factors considered in these recommendations that should also be considered when making hardware selection include:

- Number of Users

- Data Entry Time (i.e., will all users be entering data at the same time (ex., Shift Change) or will data entry be spread throughout the day)
- Number of Units or Wards
- Number of Infor Instruments assigned to each Patient (ex., Allied Health)

Single Server Configuration – 500 Patients per Day

Application / Database / Data Warehouse Server

- Processor – 2 x Dual Core 2.0GHz
- Memory – 8GB 667MHz
- Hard Drive
 - Operating System & Software
 - RAID 1
 - 2 x 36GB 15K RPM
 - Data
 - RAID 5, RAID 6 or RAID 10
 - 3 x 146GB 15K RPM
- Network – 2 x Gigabit Ethernet (Teamed)

Two Server Configuration – 1,000 Patients per Day

Application Server

- Processor – 1 x Dual Core 2.0GHz
- Memory – 4GB 667MHz
- Hard Drive
 - Operating System & Software
 - RAID 1
 - 2 x 36GB 15K RPM
- Network – 2 x Gigabit Ethernet (Teamed)

Database / Data Warehouse Server

- Processor – 2 x Quad Core 2.0GHz
- Memory – 8GB 667MHz
- Hard Drive
 - Operating System & Software

- RAID 1
- 2 x 36GB 15K RPM
- Data
 - RAID 5, RAID 6 or RAID 10
 - 3 x 146GB 15K RPM
- Network – 2 x Gigabit Ethernet (Teamed)

Two Server Configuration – 1,500 Patients per Day

Application / Data Warehouse Server

- Processor – 2 x Quad Core 2.0GHz
- Memory – 8GB 667MHz
- Hard Drive
 - Operating System & Software
 - RAID 1
 - 2 x 36GB 15K RPM
 - Data
 - RAID 5, RAID 6 or RAID 10
 - 3 x 146GB 15K RPM
- Network – 2 x Gigabit Ethernet (Teamed)

Database Server

- Processor – 2 x Quad Core 2.0GHz
- Memory – 8GB 667MHz
- Hard Drive
 - Operating System & Software
 - RAID 1
 - 2 x 36GB 15K RPM
 - Data
 - RAID 5, RAID 6 or RAID 10
 - 3 x 36GB 15K RPM
- Network – 2 x Gigabit Ethernet (Teamed)

Three Server Configuration – 2,000 Patients per Day

Application Server

- Processor –1 x Dual Core 2.0GHz
- Memory – 4GB 667MHz
- Hard Drive – Operating System & Software
 - RAID 1
 - 2 x 36GB 15K RPM
- Network –2 x Gigabit Ethernet (Teamed)

Database Server

- Processor – 2 x Quad Core 2.0GHz
- Memory – 12GB 667MHz
- Hard Drive
 - Operating System & Software
 - RAID 1
 - 2 x 36GB 15K RPM
 - Data
 - RAID 5, RAID 6 or RAID 10
 - 3 x 54GB 15K RPM
- Network –2 x Gigabit Ethernet (Teamed)

Data Warehouse Server

- Processor – 2 x Quad Core 2.0GHz
- Memory – 12GB 667MHz
- Hard Drive
 - Operating System & Software
 - RAID 1
 - 2 x 36GB 15K RPM
 - Data
 - RAID 5, RAID 6 or RAID 10
 - 3 x 250GB 15K RPM
- Network –2 x Gigabit Ethernet (Teamed)

Workstation(s)

The following workstation hardware recommendations are provided as a guideline to aid in selecting hardware to provide optimal performance for Infor Care Workloads. The majority of users will not require the use of non Web-Based Applications; these are typically limited to project managers and I.T. staff.

Administration Console Users

Users of the Infor Care Workloads Administration Console will have a windows forms based application installed on their workstations.

Workstation Software

Operating System

The Infor Care Workloads Administration Console is a windows forms based application requiring a Microsoft Windows operating system. Infor supports all Windows Workstation operating systems that are capable of running the software referenced in the next section. These operating systems include:

- Windows 7
- Windows Vista
- Windows XP
- Windows 2000

Both 32 & 64 Bit versions of these operating systems are supported. Each operating system has varying editions all of which are supported.

Other

The Infor Care Workloads Administration Console utilizes the **Microsoft .Net Framework 1.1**. Each version of the Microsoft .Net Framework functions independently of other versions such that each of these versions needs to be installed separately.

Recommended Minimum Workstation Hardware Configuration

- Processor – 1GHz
- Memory – 1GB
- Hard Drive – 512MB Available
- Network – 100Mbps
- Monitor Resolution – 1024 x 768 Pixels

Normal Users

Infor Care Workloads is a web based application that is viewed through a web browser. As such it may be utilized on a variety of operating systems such as Apple Macintosh OS X and LINUX. However, Microsoft Windows combined with Microsoft Internet Explorer will provide the best user experience particularly when viewing reports. Infor Care Workloads' reports utilize SQL Server Reporting Services and are optimized for use with Microsoft Internet Explorer.

A variety of web browsers are available and Infor Care Workloads can be viewed through many of these including:

- Microsoft Internet Explorer
- Mozilla Firefox
- Google Chrome
- Apple Safari
- Opera

Each browser will render Infor Care Workloads slightly differently. Infor recommends the use of **Microsoft Internet Explorer**.

Infor Care Workloads utilizes client-side JavaScripts as well as Cookies. No plug-ins or 3rd party software is required for the client browser unless Clinical Context Object Worker (CCOW) is enabled. If CCOW is enabled Infor Care Workloads requires an ActiveX control to be installed on the client PC to support Caradigm Vergence®, <http://www.caradigm.com/>. This control will be automatically downloaded and installed when Infor Care Workloads is first run if CCOW is enabled. Note that ActiveX controls may only be run using Microsoft Internet Explorer, making the use of Internet Explorer a requirement for CCOW.