

# Windchill and Pro/INTRALINK 10.0 Initial Server Hardware Sizing Guidelines

July 2011

## Supported Releases and Products

Windchill® 10.0  
Windchill PDMLink®  
Windchill ProjectLink™  
Pro/INTRALINK® 10.0

## Introduction

PTC has developed server hardware sizing guidelines based on the Windchill 10.0 F000 for each of the supported Windchill platforms and databases. The guidelines are intended to help you determine the server requirements for a general Windchill PDMLink, Windchill ProjectLink, or Pro/INTRALINK 10.0 installation for up to 5000 weighted active CAD and non-CAD users.

The guidelines are derived from simulated multi-user load tests consisting of a variety of commonly used CAD and non-CAD users operations. The loads generated during these tests, while considered realistic for the given number of users, will not, in all likelihood, represent the identical loads in your planned Windchill installation. The PTC hardware sizing methodology that uses a weighted number of active users is flexible, allowing you to tailor the methodology to more closely represent your company's general intended usage of Windchill PDMLink, Windchill ProjectLink, or Pro/INTRALINK 10.0.

For small to medium sized Windchill installations, PTC recommends that you follow the recommendations in this document, but remember that a margin of error in the final calculation is normal (particularly where peak loads are concerned).

For larger, distributed, customized, and complex Windchill installations where the loads are more difficult to predict, PTC recommends engaging PTC Global Services to assist in designing your Windchill architecture and specifying the hardware requirements.

## Initial Server Hardware Sizing Guidance Subject to Change

This document provides initial server hardware sizing guidance for Windchill 10. The initial hardware sizing guidance provided by this document is based on preliminary multi-user load testing on Windchill 10 with multiple platforms. It is an interim resource and will be superseded when the guidelines for each of the supported Windchill platforms are published.

**Note:** The final server sizing guidance for a particular platform may change after comprehensive load testing on the platform is completed and the Windchill 10 guide for that platform is published.

For the latest server hardware sizing information, see the **Windchill Installation and Configuration Resource** page:

[www.ptc.com/go/install-windchill](http://www.ptc.com/go/install-windchill)

## Windchill 10 Server Hardware Guidance

The objective of Windchill hardware sizing is to determine the following:

- Windchill Application Server - CPU Requirements
- Windchill Application Server - RAM Requirements
- Database Server - CPU Requirements
- Database Server - RAM Requirements

The initial Windchill 10 server hardware guidance is provided relative to the server hardware requirements for Windchill 9.1.

Windchill 10 Initial Server Hardware Requirements Relative to Windchill 9.1		
	CAD Users	Non-CAD Users
<b>Windchill Application Server</b>		
CPU	+ 15%	+ 30%
RAM	Same	Same
<b>Database Server</b>		
CPU	Same	Same
RAM	Same	Same

## General Steps for Hardware Sizing Using the Initial Windchill 10 Server Guidelines

**Note:** PTC assumes that the reader is familiar with the Windchill hardware server sizing server sizing definitions and process detailed in each of the Windchill 9.1 Server Hardware Sizing Guidelines. If necessary, see the [Sizing the Windchill PDMLink, Windchill ProjectLink, and Pro/INTRALINK 9.0 & 9.1 Servers](#) section of any of the *Windchill 9.1 Server Hardware Sizing Guidelines* for details.

### Required Documentation

Initial Windchill 10 server hardware guidance is provided relative to the server hardware requirements for Windchill 9.1. Therefore, to size the server hardware for your Windchill 10.0 deployment, you will need this document and *Windchill and Pro/INTRALINK 9.1 Server Hardware Sizing Guideline* document for your platform.

The server hardware sizing guidelines available for Windchill 9.1 can be found on the **Windchill Installation and Configuration Resource** page:

[www.ptc.com/go/install-windchill](http://www.ptc.com/go/install-windchill)

### Determining Windchill Application Server CPU Requirements

Complete the following steps to determine the CPU requirements for the Windchill 10 application server tier:

1. Determine the Required CPU for CAD Users (if applicable).
  - Calculate the Weighed Number of Active for CAD Users Only
  - Refer to the appropriate Windchill 9.1 Hardware Sizing Guide for your platform.
  - Determine the required number of CPU cores from the Application Server Sizing table for CAD Users Only.
  - Multiply the required CPU cores by or 1.15 (115%)
2. Determine the Required CPU for Non-CAD Users (if applicable).
  - Calculate the Weighed Number of Active for non-CAD Users Only
  - Refer to the appropriate Windchill 9.1 Hardware Sizing Guide for your platform.
  - Determine the required number of CPU cores from the Application Server Sizing table for Non-CAD Users Only.
  - Multiply the required CPU cores by or 1.30 (130%).
3. Add the required CPU Cores for CAD and the required CPU Cores for Non-CAD users and round up.

The calculated number is the recommended minimum number of CPU Cores required for the Windchill 10.0 Application Server Tier for your deployment.

## Determining Windchill Application Server RAM Requirements and Database CPU and RAM Requirements

The steps for determining the RAM for the application tier, and the CPU and RAM for the database tier for Windchill 10 are the same as for Windchill 9.1. Simply follow the standard two step Windchill Hardware Server Sizing process detailed in each of the *Windchill 9.1 Server Hardware Sizing Guideline* documents:

Step 1 – Calculate the Weighed Number of Active Users (Modified)

Step 2 – Determine the Recommended CPU Cores and RAM for Your Server Platforms (Modified)

In summary, the steps for server hardware sizing used with this document are:

<b>1. Determine Windchill Application Server CPU Requirements</b>
1.1. Find the required CPU for CAD Users.
1.2. Find the required CPU for Non-CAD Users.
1.3. Add the required CPU Cores for CAD and the required CPU Cores for Non-CAD users and round up.
<b>2. Determining Windchill Application Server RAM Requirements and Database CPU and RAM Requirements</b>
2.1. Calculate the Weighed Number of Active Users.
2.2. Find the Application Server RAM.
2.3. Find the Database CPU and RAM required.

## Windchill 10.0 Hardware Sizing Example for 1200 Users (800 Non-CAD and 400 CAD) for IBM AIX Platform

A company needs a server to support 1200 total users, of which 800 are non-CAD users and 400 are CAD users.

### 1. Determine Windchill Application Server CPU Requirements

#### 1.1. Determine Required Application Server CPU for CAD Users (if applicable)

- Calculate the Weighed Number of Active for CAD Users Only

Variable	Description	Value
W	CAD users that the system needs to support	400
Y	Active CAD users, calculated as $W \times 0.30$	120
A	Weighted number of active users (note that Z, the Active non-CAD users, equals 0), calculated as: $3Y + Z = 360$ Round up 360 to 400	400

- Refer to the Windchill 9.1 Hardware Sizing Guide for IBM AIX.
- Determine the required number of CPU cores from the Application Server Sizing table for CAD Users Only.

Application Server Sizing Windchill 9.0 & 9.1	
Weighted Number of Active Users	IBM AIX POWER7 [quad core 3.3 GHz] (Cores/RAM)
300	2/16
400	2/16
500	3/16

For an IBM POWER7 (3.3 GHz) platform and for 520 weighed active users, the recommendation for the application tier using the IBM POWER7 platform is 2 CPUs.

- Multiply the required CPU cores by or 1.15 (115%):

$$2 \text{ CPU} \times 115\% = 2.3 \text{ CPU}$$

## 1.2. Determine Required Application Server CPU for Non-CAD Users (if applicable)

- Calculate the Weighed Number of Active for Non-CAD Users Only

Variable	Description	Value
X	Named non-CAD users that the system needs to support	800
Z	Active non-CAD users, calculated as $X \times 0.20$	160
A	Weighted number of active users (note that Y, the Active CAD users, equals 0), calculated as: $3Y + Z = 160$ Round up 160 to 200	200

- Refer to the Windchill 9.1 Hardware Sizing Guide for IBM AIX.
- Determine the required number of CPU cores from the Application Server Sizing table for Non-CAD Users Only.

<b>Application Server Sizing Windchill 9.0 &amp; 9.1</b>	
<b>Weighted Number of Active Users</b>	<b>IBM AIX POWER7 [quad core 3.3 GHz] (Cores/RAM)</b>
100	1/12
200	1/16
300	2/16

For a IBM POWER7 (3.3 GHz) platform and for 200 weighed active users, the recommendation for the application tier using the IBM POWER7 platform is 1 CPU.

- Multiply the required CPU cores by or 1.30 (130%):

$$1 \text{ CPU} \times 130\% = 1.30 \text{ CPU}$$

### 1.3. Add Required CPU Cores for CAD and the Required CPU Cores for Non-CAD Users and Round Up

<b>Windchill Application Server</b>	<b>CPU</b>
CAD Users	2.3
Non-CAD Users	1.3
<b>Total</b>	4.0 (Rounded up from 3.6)

The total is the recommended minimum required CPU cores for the Windchill 10.0 Application Server Tier for your deployment.

## 2. Determine Windchill Application Server RAM Requirements and Database CPU and RAM Requirements

### 2.1. Calculate the Weighed Number of Active for CAD and Non-CAD Users

Variable	Description	Value
W	CAD users that the system needs to support	400
X	Named non-CAD users that the system needs to support	800
Y	Active CAD users, calculated as $W \times 0.30$	120
Z	Active non-CAD users, calculated as $X \times 0.20$	160
A	Weighted number of active users, calculated as $3Y + Z = 520$ Round up 520 to 600	600

### 2.2. Determine the Application Server RAM Required

- Refer to the Windchill 9.1 Hardware Sizing Guide for IBM AIX.
- Determine the recommended RAM from the Application Server Sizing table.

#### For a IBM POWER7 (3.3 GHz) platform

For 520 weighed active users, the recommendation for the application tier using the IBM POWER7 platform is 20 GB of RAM.

Application Server Sizing Windchill 9.0 & 9.1	
Weighted Number of Active Users	IBM AIX POWER7 [quad core 3.3 GHz] (Cores/RAM)
500	3/16
600	3/20
700	4/24

### 2.3. Determine Windchill Database CPU and RAM Requirements (Same Process as for Windchill 9.1)

- Refer to the Windchill 9.1 Hardware Sizing Guide for IBM AIX
- Determine the recommended RAM from the Database Server Sizing table.

#### For a IBM POWER7 (3.3 GHz) platform

For 520 weighed active users, the recommendation for the database tier using the IBM POWER7 platform is 2 CPUs and 12 GB of RAM.

Database Server Sizing Windchill 9.0 & 9.1	
Weighted Number of Active Users	IBM AIX POWER7 [quad core 3.3 GHz] (Cores/RAM)
500	2/8
600	2/12
700	2/12

#### Summary: Windchill 10.0 Hardware Sizing Example for 1200 Users (800 non-CAD & 400 CAD) for IBM AIX Platform

Resources	Windchill Application Server	Database Server
CPU	4	2
RAM	20 GB	12 GB



## Additional Information

Windchill Installation and Configuration Resource Page

[www.ptc.com/go/install-windchill](http://www.ptc.com/go/install-windchill)

Windchill 10.0 Software Matrices

[https://www.ptc.com/view?im\\_dbkey=124477](https://www.ptc.com/view?im_dbkey=124477)

Windchill 10 Client Requirements - Technical Brief

[https://www.ptc.com/view?im\\_dbkey=125512](https://www.ptc.com/view?im_dbkey=125512)

Windchill and Pro/INTRALINK 9.0 and 9.1 Server Hardware Sizing Guidelines - HP-UX Platform

[http://www.ptc.com/view?im\\_dbkey=74842](http://www.ptc.com/view?im_dbkey=74842)

Windchill and Pro/INTRALINK 9.0 and 9.1 Server Hardware Sizing Guidelines - IBM AIX Platform

[http://www.ptc.com/view?im\\_dbkey=74841](http://www.ptc.com/view?im_dbkey=74841)

Windchill and Pro/INTRALINK 9.0 and 9.1 Server Hardware Sizing Guidelines - Sun Solaris Platform

[http://www.ptc.com/view?im\\_dbkey=83101](http://www.ptc.com/view?im_dbkey=83101)

Windchill and Pro/INTRALINK 9.0 and 9.1 Server Hardware Sizing Guidelines - Microsoft Windows Platform with Oracle Database

[http://www.ptc.com/view?im\\_dbkey=88845](http://www.ptc.com/view?im_dbkey=88845)

Windchill and Pro/INTRALINK 9.0 and 9.1 Server Hardware Sizing Guidelines - Microsoft Windows Platform with Microsoft SQL Server Database

[http://www.ptc.com/view?im\\_dbkey=118062](http://www.ptc.com/view?im_dbkey=118062)

Windchill Future Platform Support Summary

[http://www.ptc.com/view?im\\_dbkey=69784](http://www.ptc.com/view?im_dbkey=69784)

PTC Customer Service Contact Support

[http://www.ptc.com/cs/doc/cont\\_sup.htm](http://www.ptc.com/cs/doc/cont_sup.htm)

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<http://www.ptc.com/appserver/partners/search.jsp>

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