

# PC Configuration for RoboCup 2005 Soccer Simulation

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## 1 Introduction

This document describes how to prepare the environment for RoboCupSoccer simulation on your computers. Similar PC settings will be applied at RoboCup 2005 in Osaka. The information on the PC configuration at the competition site are also presented.

### 1.1 PC Specifications

Two types of computers will be available for the RoboCupSoccer simulation league. The specifications are shown in the following:

#### [Dell OptiPlex GX620]

- CPU: PentiumIV 640, 2MB L2 cache, 3.2GHz
- Memory: 1GB
- HDD: SATA 160GB (7200 rpm)
- DVD+/-RW drive
- Graphics Card: ATI RADEON X600 SE DDR 128M

#### [Dell OptiPlex GX280]

- CPU: PentiumIV 540, 1MB L2 cache, 3.2GHz
- Memory: 1GB
- HDD: SATA 160GB (7200 rpm)
- DVD/CD-ROM drive
- Graphics Card: On board

(These specifications are subject to change.)

Dell OptiPlex GX620 will be used for displaying the matches (i.e. for running viewers). Soccer agents are run on Dell OptiPlex GX280.

Currently it is planned that one team can use three PCs (Dell OptiPlex GX280) for running soccer agents for 2D competition. One PC (Dell OptiPlex GX620) is used for running the soccer server and viewer. Thus, seven PCs in total are involved for a single match.

For 3D competition, it is planned that a single match involves four PCs in total: one for server, one for monitor, and one for each team. There will be four parallel matches in

the first round. In two matches out of four, Dell OptiPlex GX620 is used for running 3D monitor. Dell OptiPlex GX280 will be used for the other two monitors. All servers and teams in 3D competition will be run on Dell OptiPlex GX280.

Coach competition uses three PCs for each team (11 soccer agents and one coach agent) and one PCs for soccer server and monitor.

These plans are subject to change depending on the specifications and the number of PCs available.

## 1.2 Software

The operating system used in the RoboCupSoccer simulation league is Gentoo Linux. It will be installed on all computers in the soccer simulation league. One main feature of Gentoo Linux is *Portage*. Portage is a powerful tool for distributing and installing new packages, automatically optimizing the package building.

The local committee has prepared RoboCup portage. RoboCup portage is a set of packages that are necessary to construct the environment for 2D and 3D soccer simulation. Currently, rcssbase-10.0.10, rcssserver-10.0.4 and rcssserver3d-0.3.go are included in the RoboCup portage (as of June 30, 2005). The latest version of the RoboCup portage will be used at the competition site. Using RoboCup portage, you can construct the similar environment on your computers. Also this portage will significantly reduces your efforts to set up the RoboCup soccer simulation environment. (However, it should be noted that this does not necessarily mean that you must use this portage.)

The following section presents the installation of RoboCup portage.

## 2 Installing RoboCup Portage

### 2.1 From the dump image

(If you already have a computer on which Gentoo Linux has been installed, go to Subsection 2.2.)

Install Gentoo Linux on you computer. Use stage3-x86-robocup-2005MMDD.tar.bz2 instead of stage3-x86-2005.0.tar.gz2 as the stage tarball in Stage 3 installation procedure. Stage3-x86-robocup-2005MMDD.tar.bz2 can be downloaded from the following link:

<http://www.ntt.dis.titech.ac.jp/robocup2005/>

The following links may help installing Gentoo Linux:

<http://www.gentoo.org/doc/en/handbook/2005.0/handbook-x86.xml?part=1\&chap=0>  
<http://www.gentoo.org/doc/en/gentoo-x86-quickinstall.xml>

RoboCup packages will be installed in /opt/robocup.

The dump image was compiled for x86 machines in order to maintain general compatibility of binary files. It will be optimized for Pentium IV machines at the competition.

The dump image includes a set of packages for 2D and 3D soccer simulation. The dump image was made by installing rcssserver, rcssserver3d on the image of stage3-x86-2005.0.tar.bz2.

In the dump image only the minimum set of application softwares is installed (X windows, 2D soccer simulation, and 3D soccer simulation). Additional softwares such as editors and desktop environments (kde/gnome) can be installed through preference.

### 2.2 On Gentoo Linux Machines

If you have computers with Gentoo Linux but the environment of soccer simulation is not installed yet, install RoboCup Portage by the following steps:

1. Login to the cvs pserver:

```
# cvs -d :pserver:anonymous@cvs.sourceforge.jp:/cvsroot/rc-oz login
```

When password is requested, just press Enter key.

2. Checkout the RoboCupPortage tree:

```
# cvs -d :pserver:anonymous@cvs.sourceforge.jp:/cvsroot/rc-oz co RoboCupPortage
```

3. Move *portage* directory in *RoboCupPortage* directory to */opt/robocup/portage*.

```
# mkdir -p /opt/robocup
# mv RoboCupPortage/portage /opt/robocup
# rm -rf RoboCupPortage
```

4. Edit a configuration file for the use of */opt/robocup/portage*:

```
# vi /etc/make.conf
```

Add the following two lines in */etc/make.conf*:

```
PORTDIR_OVERLAY=/opt/robocup/portage
FEATURES="digest"
```

If you have already set the above variables (i.e. *PORTDIR\_OVERLAY* and *FEATURES*), edit the lines as follows:

```
PORTDIR_OVERLAY="/path/to/foo /opt/robocup/portage"
FEATURES="bar digest"
```

5. Check the *PORTDIR\_OVERLAY* setting:

```
# emerge -pv rcssserver
# emerge -pv rcssserver3d
```

You will see the dependency information of the portage. Errors will be displayed in the information if there is something wrong with the *PORTDIR\_OVERLAY* setting.

6. Install the package:

```
# emerge rcssserver
# emerge rcssserver3d
```

By the above procedure, all necessary packages such as *rcssbase*, *monitor*, *ode*, *spades*, and *boost* will be automatically installed in your computer.

## 2.3 Updating the RoboCup Portage

This section describes how to update the RoboCup portage. The RoboCup portage will be occasionally updated in order to include newly released soccer server.

If you have Manifest files in portage tree, it is recommended that they are removed from your PC before you run emerge command:

```
# find /opt/robocup/portage -name Manifest | xargs rm
```

Update/checkout portage tree and install new packages (and unistall old server if installed):

```
# emerge rcssserver
```

(Only rcssserver will be updated.)

or

```
# emerge -u rcssserver
```

(Dependent packages will be also updated.)