

## Virtual PC Installation

### Introduction

This document provides procedures for the proper installation of Virtual PC (XP image) on a Windows 7 System.

It is necessary to run the Kairos application suite on a Windows XP machine, because a critical component – the BeWISE® (a product of Edelwise Inc.) shared variables – do not function properly in the Windows 7 environment. Until a Windows 7 solution is established, these instructions provide a method of successfully operating the entire suite.

### Overview

Download Virtual PC from Microsoft. Follow the instructions on their site to download the correct version of Virtual PC that will be needed for the installation. This step can be skipped if a previously downloaded Virtual PC program file is provide on a DVD.

Install the file system on the system being used as an OCU or ground vehicle.

Configure the system to work with Shepard or Ivan. A virtual disk image is provided via File Transfer Protocol (FTP) and will be loaded onto the Virtual PC. Install djVirtual.exe (also provided in the FTP directory) on the Windows 7 side of the system. This program will allow the USB ports to be accessed by the Virtual PC system.

When finished, test to make sure everything works.

### Equipment

The target computer should have, at a minimum, an Intel i5 processor, 3GB of DDR memory installed, and a 500GB hard drive. Computers that do not meet these minimums may be set-up, but have proved problematic during operation and are not recommended.

A DVD or approved military exchange cartridge with the software needed to install the Virtual PC system into the laptop will need to be acquired from Kairos Autonomi Inc. prior to starting the installation process.

### Goal

The goal of this process is to configure a system that has a native Windows 7 OS that in turn runs a Virtual PC configured with a Virtual Windows XP system with Kairos Shepard/Ivan software. This setup should provide the same functionality as a native Windows XP system running Kairos Shepard/Ivan software.

## Procedure

1. Download the VirtualPC directory from the Kairos provided location. Save this directory to a DVD or approved military exchange cartridge.
2. Load the DVD or exchange cartridge into the target computer.
3. Double-click on the “msu” installer program (i.e. Windows6.1-KB958559-x86-RefreshPkg.msu”) and follow the onscreen instructions. This program will automatically install the software needed to make a Virtual PC image on the Windows 7 system.
4. Open Windows Explorer (Not Internet Explorer) on the Windows 7 system and copy the VirtualGC07 folder to the C:\ drive of the Windows 7 system.
5. On the Windows 7 machine, click “Start”, then “Windows Virtual PC.”
6. Create the Virtual XP system by clicking on the “Create Virtual Machine” at the top of the window.
  - a. Type “KA\_OCU” for the “Name:” of the virtual system.
  - b. Leave “Location:” at the default value.
  - c. Click “Next”.
  - d. Allocate 750MB for the “RAM:” of the system.
  - e. Ensure the “Use computer network connections” is checked.
  - f. Click “Next”.
  - g. Select the “Use an existing virtual hard disk” radio button.
  - h. Click on “Browse” and select “C:\VirtualGC07\XP\_KA\_OCU\_1\_8.vhd”.
  - i. Click “Open”. The window should open up into the selected folder automatically.
  - j. Click “Create”.
  - k. After the system has created a virtual PC, there should be a file named “KA\_OCU” in the “C:\Users\OCU\Virtual Machines” folder.
7. Configure the network Ethernet adaptor on the Windows 7 system, *as follows*:
  - a. Start → Control Panel → Network → Sharing Center → Change Adaptor Setting → Local Area Connection → (Right Click) → Properties → Internet Protocol Version 4 (TCP/IPv4) → Select-Properties
  - b. The Virtual PC image was set based on a Windows 7 machine that had an IP:subnet of 192.168.200.180:255.255.255.0. As a result, the Virtual PC image has mapped drives based on this IP and subnet. If the target Windows 7 machine has a different IP or subnet, there are two options:
    - Set the Windows 7 machine’s IP and subnet to 192.168.200.180 and 255.255.255.0, respectively.

**OR**

    - Note the Windows 7 machine’s IP and subnet, then in step 11 remap the Virtual PC’s mapped drives to these values.

### NOTE

The IP address for the Virtual PC should already be configured to match the IP configuration of the Windows 7 system. If the Windows 7 system was set up for an IP address of 192.168.200.180, then this will allow the Virtual PC to have access to the drives on the Windows 7 system without any further configuration changes.

8. By default, Windows 7 systems will not allow remote logins with a blank password. However, the Virtual PC needs to access the Windows 7 system without needing to enter a password for each action. Configure Windows 7 to allow remote login with a blank password, *as follows*:
  - a. Navigate to the “Control Panel → Administrative Tools → Local Security Policies → Local Policies → Security Options”.
  - b. Double-click the “Accounts: Limit local account use of blank passwords to console logon only” option.
  - c. A second window will pop-up.
  - d. Click the “Disable” button.

- e. Click “OK”.
  - f. Close the Window.
9. In the VirtualPC directory, navigate to “Virtual/install.bat”. Double-click the “install.bat” file. This will install djVirtual in the GC07 folder.
  10. Double-click the KA\_OCU file name in the “Virtual Machine” folder. Windows XP should fully boot with KA software loading as part of the boot up process. Once fully loaded, close “Basis” by clicking on the “Support Executables” tab and then the “Kill SV” button. Windows will attempt to load unnecessary drivers, close any windows prompting you to load drivers.
  11. Setup network connections, *as follows*:

**NOTE**

The following works for wired systems, such as the standard OCU configuration. If the system is being used wirelessly, then the network connections will need to be modified.

- a. In Windows Explorer, navigate to file named “KA\_OCU” in the “C:\Users\OCU\Virtual Machines” folder.
  - b. On the toolbar, click the “Settings” button. This will open a “Windows Virtual PC Settings” window.
  - c. In the settings window, in the “Setting” column on the left, click on the “Networking” option. This will show Networking options in the right panel.
  - d. In the Networking options, set the first two adapters to:
    - Adapter 1: Intel® PRO/1000 PL Network Connection
    - Adapter 2: Not connected
  - e. Click the “OK” button.
12. Enable sharing for drive C: of the Windows 7 system, *as follows*:
    - a. Click the folder icon in the task bar.
    - b. Right click “Local Drive (C:)”
    - c. Select the “Share with” option and then select “Advanced Sharing...”
    - d. On the “Sharing” tab, select “Advanced Sharing...”
    - e. In the window that pops up, check “Share this folder”.
    - f. Ensure the share name is “C”.
    - g. Click “OK”.
    - h. Click “Close”.
  13. If the Windows 7 system has an IP and subnet of 192.168.200.180 and 255.255.255.0, respectively, skip to step 14; otherwise, map the Windows 7 drives to the Virtual PC Computer using the following format.
    - a. Click the “Start” button in the Virtual PC.
    - b. Right Click “My Computer” in the menu options.
    - c. Click “Map Network Drive...”
    - d. Select the drive designator for the Windows 7 mapped drive (the suggested drive is “Z:”).
    - e. Type “\###.###.###.###\x” into the “Folder:” text box, where ###.###.###.### is the desired IP and x is the drive letter (usually “C:” for the main hard drive).
    - f. Click “Finish”.

**NOTE**

If the Virtual PC won’t connect to drives on the Windows 7 system, then verify that the Windows 7 firewall is not blocking the attempts from the Virtual PC to map the drives. To verify this, temporarily disable the Firewall and determine whether the drives can be accessed. **DO NOT LEAVE THE FIREWALL IN THIS SETTING.** If the firewall is preventing drive mapping, then the firewall needs be reconfigured to allow for the Virtual PC to access the drives on the Windows 7 system. Refer to the Microsoft website for help in determining which settings are causing the access issue.

- g. Repeat all of step 13, to map the “Local Disk (G:)” to the “W:” drive.

14. It is necessary to set up the COM ports for the Virtual PC, *as follows*:
  - a. Click on “Tools”, at the top of the Virtual PC window.
  - b. Select “COM1”.
  - c. Click “Named pipe:”.
  - d. Enter “\\.\pipe\PipeCom1” into the text box.
  - e. Click “OK”.
  - f. Click “Tools” then “Settings”.
  - g. Select “COM2”.
  - h. Click “Named pipe:”.
  - i. Enter “\\.\pipe\PipeCom2” into the text box.
  - j. Click “OK”.
15. Click the Red X at the top right corner of the Virtual PC Window and select “Shut down” then click “OK”.
16. Run Shepard on the Virtual PC, *as follows*:
  - a. Start DJVirtual.
  - b. From the Windows 7 desktop, click on “Start” and then “My Computer”.
  - c. Click on “C:” Drive and then on the “\GC07” folder.
  - d. Double-click “DjVirtual.exe” to start DjVirtual running in the Windows 7 environment.
17. Reboot the Virtual PC, *as follows*:
  - a. From the Windows 7 desktop, click on “Start”
  - b. Click on the “Windows Virtual PC” option.
  - c. Select KA\_OCU.
  - d. The Virtual PC should boot Windows XP and then the Kairos software. Once fully booted the Shepard application should be running. Configure Shepard according to local requirements.

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