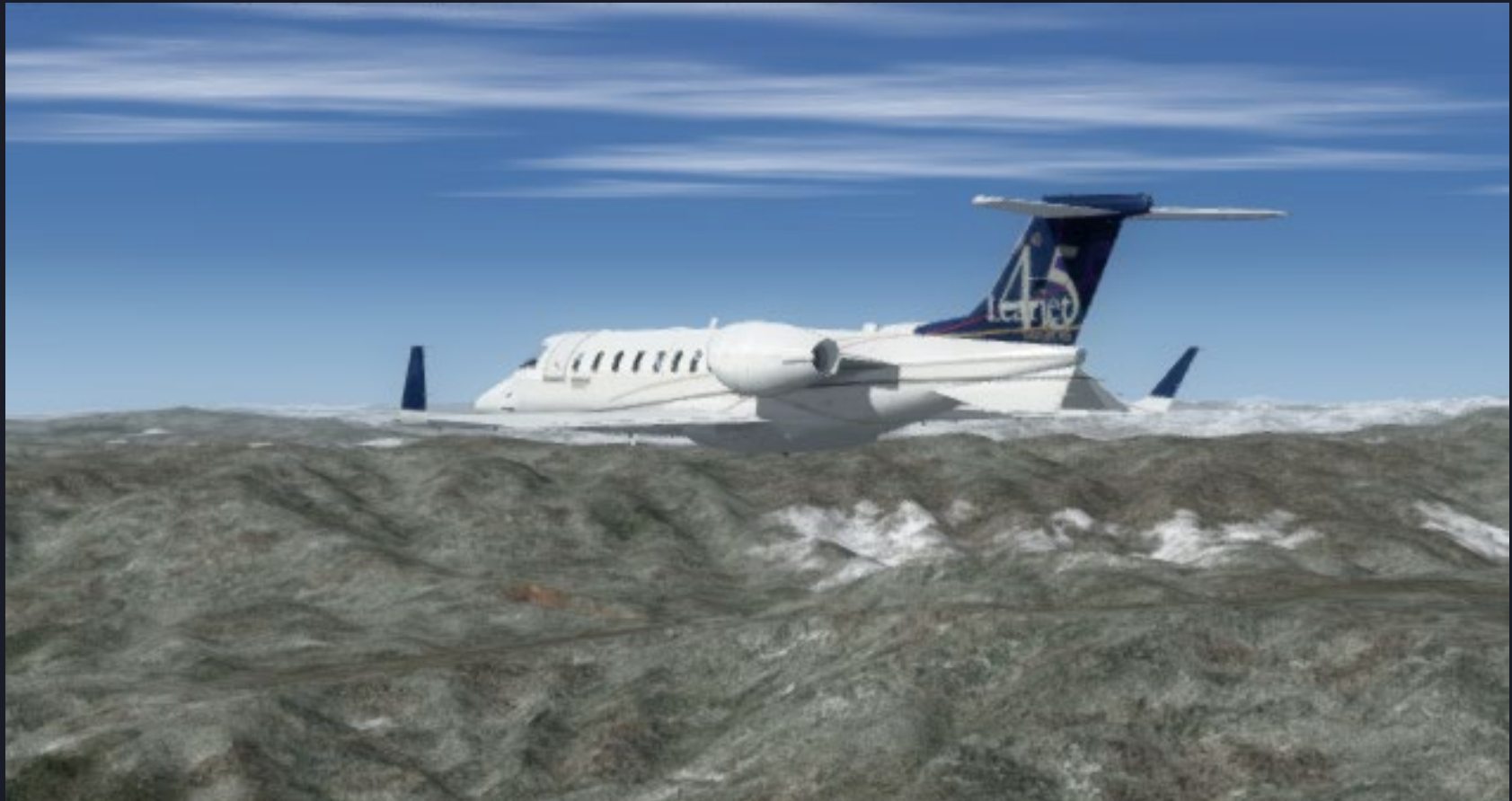


# Prepar3d



## Overview

- ✈ Supports Prepar3d 3.x (32-bit) and Prepar3d 4.x (64-bit)
- ✈ Configurable to use any Prepar3d 3D Model
- ✈ Multi-Channel, Multi-View Capable
- ✈ Two Default Models Provided.
- ✈ Single Aircraft, Local Machine. Networking Currently Not Supported.

# DSix Prepar3d Interface

## Description

This section describes configuring DSix for first use with Prepar3d, DSix to P3D variable mapping, utilizing P3D terrain elevations in the DSix simulation, and loading options.

## What you will learn

*Upon completion of this section, you will be able to:*

- Configure DSix to work with P3D v3 or V4
- Start P3D automatically from DSix
- Define aircraft contact points and map them to P3D terrain elevation
- Customize your real-world starting location
- Customize P3D settings such as time of day, weather, etc.

## First Use

The DSix installer provides a simple DSix-P3D setup utility that may be run to place all required libraries and configuration files, and adjust registry settings and DSix preferences in preparation for utilizing P3D as a DSix image generator.

### Setup Prerequisites:

-  Admin rights
-  Prepar3d 3 and/or Prepar3d 4 installed

## Running the Setup Utility

The DSix-P3D setup utility is installed to:

*<DSix Root Directory>\Setup\Prepar3d\DSixP3DSetup.exe*

To run the utility, simply right-click and select “Run As Administrator”. After allowing the setup to run, a welcome screen will be displayed, followed by a page that provides a single option: Setup for Prepar3d version 3 or Prepar3d version 4.

This utility may be re-run at any time to change the currently supported P3D version or to add support for another user.

## Quickstart with a BARJet Demo

The DSix-P3D setup utility installs a modified version of the BARJet that is configured to be displayed in P3D.

- ✈ Start DSix. P3D will launch automatically

- ✈ Load the project

  - <DSix Root>\Sample Models\External Host\P3DDemo\BARJet\_TGT\BARJet\_P3D.d6x*

- ✈ Map IO in the usual manner

- ✈ Start a simulation run

## Enabling and Disabling Prepar3d

DSix utilization of P3D requires the loading of the DSix Prepar3d interface module, “*DSixGraphics\_P3D.d6x*”. Use the DSix module manager utility, found under the DSix “Tools” menu to load or unload this module.

Additionally, DSix may be configured to auto-start P3D via DSix user preferences. From the DSix menu select “*..Edit..Preferences*”. Select “*DSixGraphics\_P3D*” from the tree control on the left, and modify the value for the token “*P3DAtStartup*”. Non-zero value indicates that P3D should be run at DSix startup.

Note that both DSix module loading and preference evaluation occur upon DSix startup. DSix must be restarted for changes to these settings to take effect.

## Configuring Prepar3d Terrain Detection

DSix must be set up to define aircraft contact points for the current project, and to register these points with P3D. DSix will then obtain current\* terrain elevation from P3D for each registered contact point. The DSix Terrain Detection utility is found via “*..Tools..Configure Terrain Detection*” in the DSix menu. Contact points for P3D are defined by providing x, y, and z offsets from aircraft CG, and mapping a DSix variable that will store the elevation value.

\* A lag of one to two simulation frames will occur in obtaining values from P3D.



## Prepar3d Customization

It is assumed that the DSix user has some familiarity with P3D and its settings. This section covers only settings that must take interaction with DSix into account.

- ✈ Location
- ✈ Time and Date
- ✈ Scene Complexity
- ✈ Additional Views
- ✈ External 3D model
- ✈ Managing the Default Scenario

## Prepar3d Customization (Location)

Location is passed from DSix to P3D. To customize your starting location, you must modify your project's initial conditions.

If desired, new initial condition sets may be added for multiple starting locations.

When starting in the air, you may need only modify your IC values for Lat/Lon. Starting on the ground requires further customization.

## Selecting a P3D Airport as Initial Location

In this quick tutorial, we will modify the BARJet to use a P3D airport as a default starting location in DSix. This exercise will involve the following tasks:

- ✈ Determine runway coordinates, elevation and heading
- ✈ Create and configure IC settings for the new location
- ✈ Load and fine-tune the initial conditions
- ✈ Save the DSix project and the P3D scenario

## Determine P3D Runway Data

- ✈ Exit DSix, and launch P3D as a standalone application
- ✈ Select “*..Navigation..Go to Airport*” from P3D menu
- ✈ Type “Wright-Patterson” in the Airport Name field
- ✈ Select “*Wright-Patterson AFB*” from the airport list
- ✈ Close dialog with OK
- ✈ If necessary, type “*SHIFT + z*” keys to display location information\*
- ✈ Take note of airstriplat, lon, elevation and heading
- ✈ Exit P3D

\* If shift + z keys have no effect, select “*..Options..General*” from the P3D menu. Select “*Information*” from the column on the left, and check the box for “*Show Primary Info Text*”.

## Configure DSix IC for Wright-Patterson

- ✈ Start DSix. Load the BARJet P3D demo
- ✈ In DSix IC dialog, click “Add”. Name the IC set “*Wright\_Pat On Ground*”
- ✈ Set IC values for latitude and longitude
- ✈ Set heading, in degrees
- ✈ Set Altitude to 6’ AGL
- ✈ Check the box “*Initialize on Ground*”
- ✈ Close box with OK

## Fine-Tuning IC values for Wright-Pat

Potential exists for small location errors, due to floating point rounding and magnetic deviation. To fine tune the settings:

- ✈ Click on the P3D window to set input focus
- ✈ Click keyboard F12 key to switch to overhead view
- ✈ Use keyboard +,- keys to zoom in/out
- ✈ Make minor adjustments to location and heading as necessary
- ✈ Save the project in DSix
- ✈ Click keyboard F10 key to return to out-the-window view
- ✈ Select “*..Scenario..Save*” from the P3D menu
- ✈ Select “*BAR P3DHost Lear45*” from the list, and close with OK  
(optional)

## Prepar3d Customization (Time and Date)

Time of day and seasonal configuration may be set by selecting “*..World..Time and Season*” from the P3D menu.

## Prepar3d Customization (Scene Complexity)

Depending on your hardware capabilities, screen resolution, and the number of displays being drawn, it may be necessary to modify P3D scene complexity in order to maintain an acceptable frame rate.

To configure P3D complexity, select “..Options..General” from the P3D menu. The entries listed under Graphics, (Display, World, Lighting, and Weather) contain sliders that may be used to increase or reduce complexity.



## Prepar3d Configuration (Additional Views)

P3D supports multiple views, which may be utilized to display both internal and external aircraft views, as well as allowing a wider overall field of view.

To create a new view, select “*..View..New View*” from the P3D menu. To move a view outside the main view, right-click the view and select “*Undock Window*”

To change a display’s viewpoint, use the function keys:

F9 – Virtual Cockpit (if available)

F10 – Cockpit

F11 – Outside

F12 – Top Down

## Prepar3d Customization (3D Aircraft Model)

Configuring P3D to utilize a specific 3D model in external views is possible, but can be complicated, and is outside the scope of this overview.

Contact Bihrtle ([support@bihrtle.com](mailto:support@bihrtle.com)) to discuss options and procedures.

To see an example of an alternate model in loaded in P3D, select “*..Scenario..Load*” from the P3D menu, and select “*BAR\_P3DHost\_F16*”.

## Prepar3d Customization (Managing the Default Scenario)

The DSix/P3D configuration utility creates two P3D scenarios configured to work with DSix. Either of these scenarios may be loaded, modified, saved, or saved as a new scenario. It may often be desirable to save a highly modified scenario, rather than overwriting the defaults.

One item that MAY NOT be modified is the base vehicle being loaded through the “*..Vehicle..Select*” menu item. Selecting a vehicle in this manner will cause P3D to load libraries that are not compatible with DSix control.



Flight Simulation Environment