A Boost For Multiplayer

Introduction

Every user of Falcon dreams of an internet experience where setting up servers and connecting players is easy, gameplay is stable and the positional updates of aircraft, missiles, and other objects in the 3D world appear as if the session was a Single Player game.

Of course, the internet is a fickle beast and nothing will ever be perfect. But Falcon 4.0: Allied Force has taken a major step forward in improving the multiplayer experience for both the novice and experienced hand alike.

At this point it is important to mark the achievements of the developers of the original Falcon 4.0. They really had a huge task on their hands. They had to keep a massive database of some 5,000 entries consistent across multiplayer connections, and bear in mind that the vast majority of players at the time of release of Falcon 4.0 were using dial-up modems. Their work was nothing short of extraordinary.

The Problems

But the developers of Falcon 4.0: Allied Force faced some significant challenges to bring multiplayer up to the standard of a 2005 product. One of those was prompted by advances in technology itself: namely the rise in the use of routers, devices which allow several computers on a local network to share a single connection to the internet.

It led to players having to put in command line switches in their shortcuts to tell Falcon which internet IP address it would work on, or what available bandwidth could be allocated. Then there was the more fundamental question of the process of connection. How could we make this as simple, and as stable, as possible for the player, particularly the new player, eliminating any confusion or complicated set up procedures?

In *Falcon 4.0: Allied Force* these hurdles have been overcome. The redesigned multiplayer user interface (UI) is intuitive and simple to use. And substantial work on the core code allows as many types of connection as possible to connect up and fly, producing, we feel, the best multiplayer experience yet in Falcon.

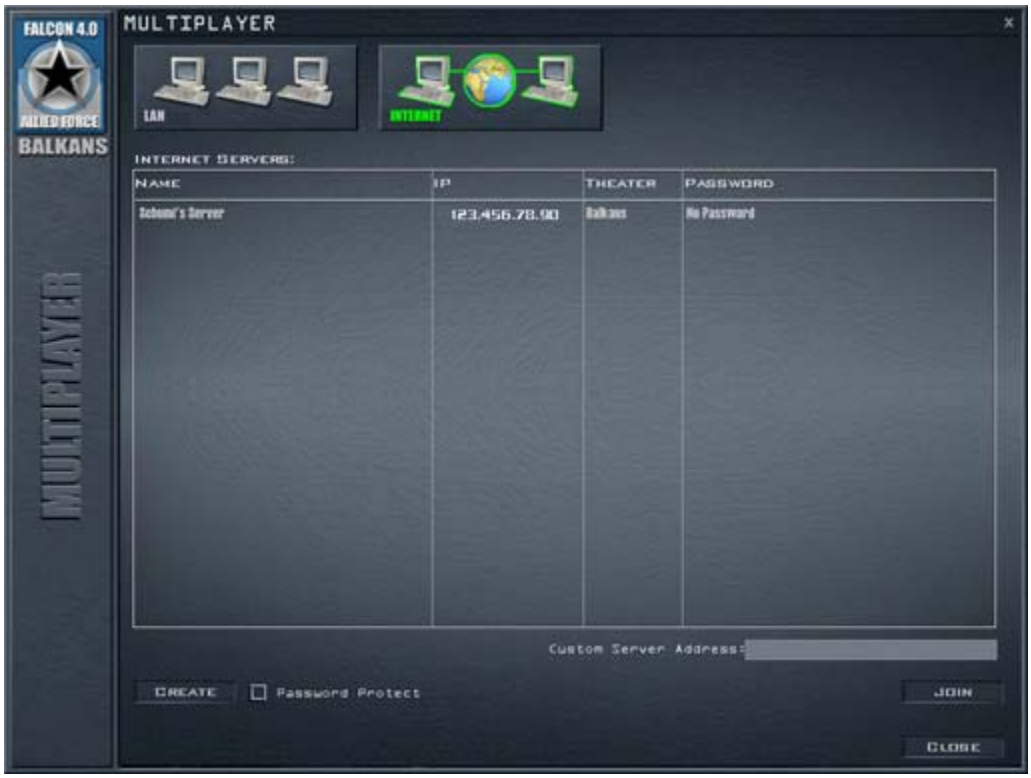
The Solutions

The majority of time in MP coding has been spent attacking bugs and examining ways to increase performance, reliability and ease of use.

That brings us to the first area of improvement, the User Interface. There are two types of multiplay: Local Area Network (LAN) sessions, where two or more computers are simply hooked up together with cables to play, or pure Internet sessions, where players from around the world can take part in the same mission in real time. Both these options are presented to the player in a screen when they hit the Multiplayer button.

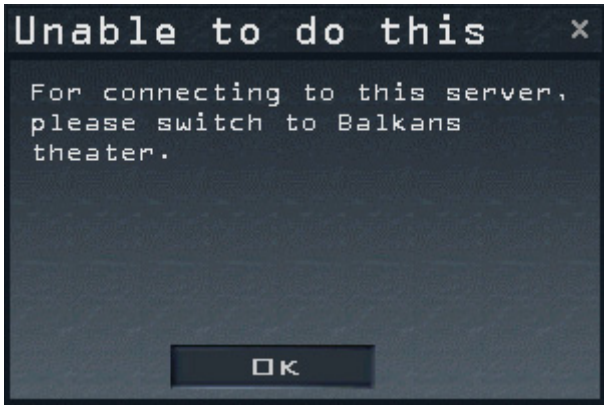
When choosing the LAN option, the player has the choice of either setting up a server to host a session (Dogfight, Tactical Engagement or Campaign) or joining a server to take part in a session. Selecting a game to join is easy: Falcon 4.0: Allied Force queries the local network and finds games for the player to select to join.

Multiplayer LAN selected.



Multiplayer Internet selected. When choosing the internet option, the player simply inputs the IP address of the player hosting the mission, then connects up.

New coding also caters for potential problems when connecting, for example if one player has the wrong theater selected a warning message appears.



If they enter the wrong IP for the game, or the internet connection itself fails, another warning message appears.

When connecting over the internet, the server and the client negotiate about details such as external IP address, even if the client is behind a Network Address Translation (NAT) router. Everything is then properly routed through to the games so that each game talks to the other games.

But of course work hasn't been confined to the UI and the connection procedures. Substantial improvements were made to the calculations in the code to ensure that most important messages get sent out to all players in order of priority, messages such as positional updates of missiles, the bleep of the RWR when being locked up by another player, a whole raft of important information.

Final Thoughts

No game will ever produce a 100% problem free multiplayer experience. But exhaustive tests have been carried out, both with real players and also newly developed "autosim" coding, where the equivalent of many days testing is done by speeding up the time in the User Interface or 3D world up to thirty two times, testing a succession of missions automatically. Lead Pursuit LLC is confident you will really enjoy the enhanced MP features.