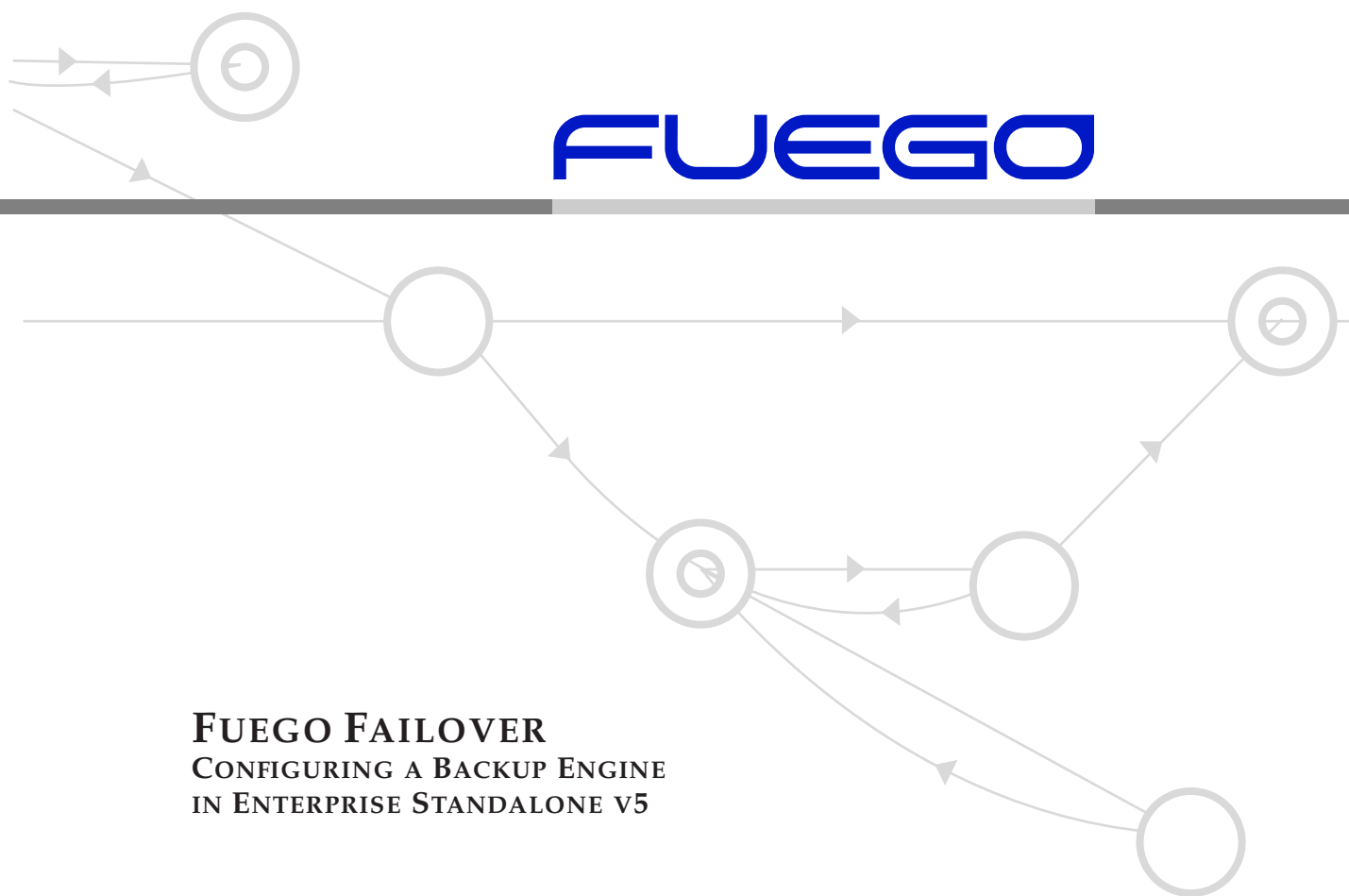




FUEGO



FUEGO FAILOVER

CONFIGURING A BACKUP ENGINE IN ENTERPRISE STANDALONE v5

Pablo Victory
pvictory@fuego.com

August 9, 2006

Contents

1	Overview	3
2	Failover Philosophy	3
3	Creating Backup Locations	5
4	Starting Backup Locations	6

1 Overview

The purpose of this guide is to outline Fuego's failover capabilities as well as establishing the basis of a Fuego Enterprise Standalone ¹ environment for failover. It addresses the failover capabilities purely within Fuego's Engine jurisdiction. To provide a complete failover architecture for any solution implemented using Fuego, it is required to consider other components that participate in the architecture and how to achieve failover for these components too.

2 Failover Philosophy

Fuego's failover philosophy is one of a Fuego engine federation configured to serve critical business process orchestration in a fail-safe manner. One of the engines in this federation is marked as **PRIMARY** and the others assume to be **backups** for this primary engine. Multiple engines can be configured to serve as backups. Any of these backup engines will take the role of the primary if the designated primary fails. When the server that has failed comes back to life, it will join in as a backup to the one acting as primary.

A backup engine *pings* the **PRIMARY** Fuego primary engine every 5 seconds. The backup Fuego engine **DOES NOT** take over while:

- The **PRIMARY** engine is running
- The **PRIMARY** engine is not responding because it is very busy, the ping receives as response the `EngineBusyException` exception
- The **PRIMARY** engine status could not be obtained because the host where it is running cannot be reached. This can be due to:
 - An engine configuration problem
 - A `java.net.UnknownHostException` error when pinging the primary engine

¹In a J2EE environment, due to the nature of an Application Server, there is no need to configure a failover engine, simply by deploying the engine to different nodes you can achieve the same result.

- A `java.net.MalformedURLException` error when pinging the primary engine
- A `java.net.NoRouteToHostException` error when pinging the primary engine

A backup engine takes over under any other ping response.

Here is a typical events sequence, each event often occurs well apart in a time line:

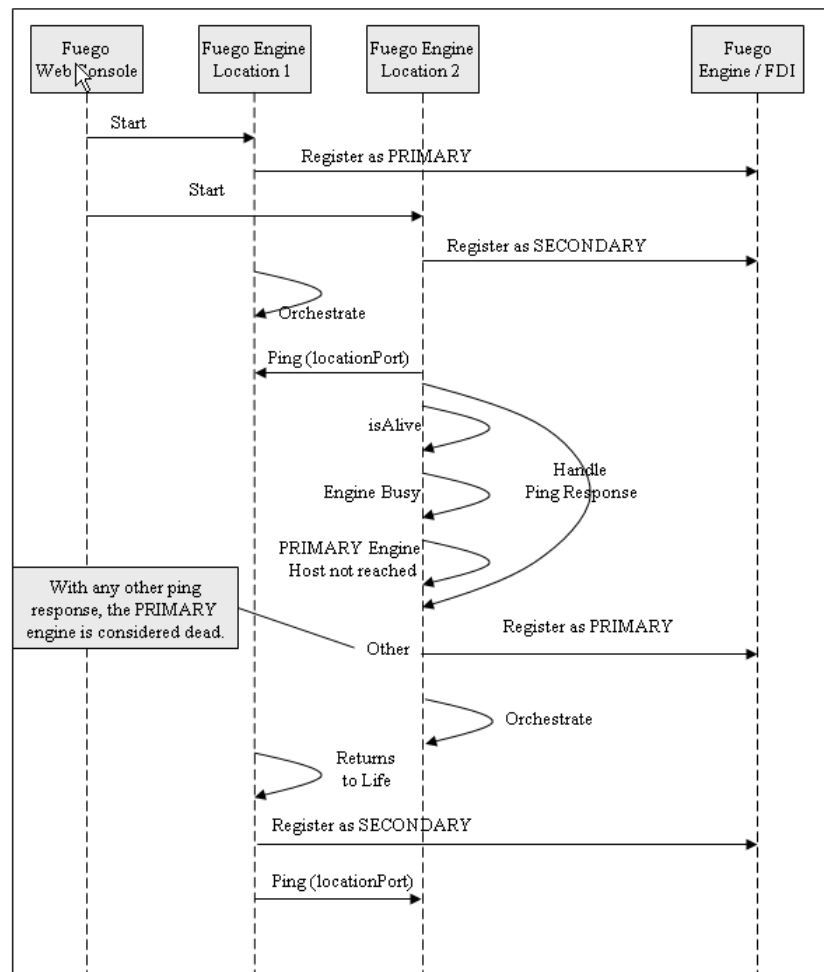


Figure 1: Failover Sequence

3 Creating Backup Locations

A backup engine is simply another Fuego engine that resides on a separate host machine. *Fuego Enterprise* together with the *Fuego Process Launcher* must be installed on this separate host or location.

This second location can then host a backup engine. When you create your engine you can specify which other locations will be hosting backup engines. Use the *WebConsole* to specify these other locations.

To create a secondary location for your failover engine, open the WebConsole and select your engine.

Basic configuration	
Name	engineOne
Type	enterprise
Host	PVictory-XP1
Home Directory	E:\fuego5.5\enterprise\server\engineOne
Log Directory	E:\fuego5.5\enterprise\log
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

Advanced Properties	
<u>Locations</u>	Edit engine database configuration
<u>Manage database</u>	Log Viewer
<u>Runtime Info</u>	Export

Figure 2: Engine properties

In the *Basic Properties* tab you will find a link named *Locations* which takes you to the list of available locations for that engine.

Engines > Edit Engine engineOne > Engine locations

Page: 1/1 - Total: 1

<input type="checkbox"/>	Host	Status	
<input type="checkbox"/>	PVictory-XP1	Not running	

Figure 3: Available locations

You can add a new location for the a backup engine by pressing the *Add* button. This will take you to the location's properties page.

Engines > Edit Engine engineOne > Engine locations > Add Engine Location

Basic configuration **Advanced Properties**

Location configuration	
Host	PVictory-XP1
Home Directory	E:\fuego5.5\enterprise\server\engineOne
Log Directory	E:\fuego5.5\enterprise\log
Protocol	ssl
Port	10099
Web Console Protocol	http
Web Console Port	8585
<input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/>	

Figure 4: Add backup locations

When entering the host name where the backup engine will reside, have in mind that it should be the actual machine name or IP address, do not use localhost or the IP 127.0.0.1. Using localhost or a loop back IP does not work in a failover scenario.

For a complete description of each parameter check the on-line help or the *Engine Tunning* guide.

Once you have entered as many locations as backup engines you wish to have you are ready to start the engines.

4 Starting Backup Locations

In order to start an engine on the new locations the Fuego Launcher should be already running on this new location; also, the `directory.properties` file on this second location should be properly configured with the directory information being used by the primary engine.

To start the engine on a specific location you should again select the *Locations* link from the engine's properties page (see figure 3). Then click the start icon for the desired location.

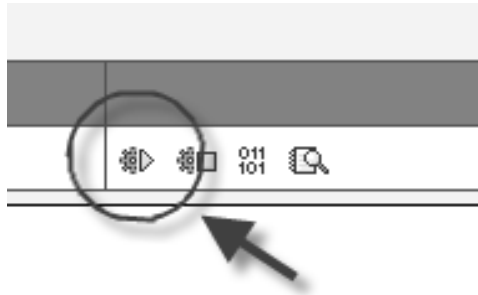


Figure 5: Start location icon

If this is the first location being started for the selected engine then this location will act as the **PRIMARY** engine.

You can then choose a different location and start the engine again. This second location will then host a backup engine. If you have more than two locations you can keep starting them and all of them will act as hosts for backup engines. In this way you can have more than one backup for your primary engine.



Remember: In order to be able to start the backup engines the Fuego Launcher must be up and running in every location you wish to start an engine. Also the `directory.properties` file in each of these locations should be configured with the directory information for the Directory being used by your primary engine.

Note that you can check the status of every location and its role from this tab. You can also start or shutdown any of these locations from here.

By default, when you start the engine from the *WebConsole*, the engine will be started in the host where the *WebConsole* is running, and that will be the primary location until another location takes control and thus is set as primary.

Also, have in mind that stopping the engine from the engine's properties page, will stop all locations for that engine. However, stopping a single location will only stop that location only. If this location is the primary location, then one of the secondary locations will take over as primary.