



Virtual Earthquake and seismology Research Community e-science environment in Europe  
Project 283543 – FP7-INFRASTRUCTURES-2011-2 – [www.verce.eu](http://www.verce.eu) – [info@verce.eu](mailto:info@verce.eu)



# Overview

- Rationale
- Bird's eye view
  - Maintaining PEs, catalogues, provenance, users
- Technologies
  - Relational DBs
  - Linked data stores
  - Triple stores / RDF
  - *H b d*
- Current version and how to use for the exercises
- Steps to be completed within the 2nd year

# Rationale

- Versioning, provenance and attribution
- Coordination of remote components
  - Consistent view of the world
- Hints to execution engines
  - Store, execute, backup and deliver optimally
- VERCE scientific gateway
  - Interfacing with scientists and other users

# Components



# Technologies

- Relational DBs - *e g M SQL*
  - Very mature and efficient
  - Widely supported
  - Strongly typed, strict schemas
- Linked data / Column stores - *e g Ca a d a*
  - Networks of entities
  - Weakly typed, flexible
- Triple stores - *e g A ac e Je a*
  - RDF-friendly
  - Weakly typed, sort-of flexible

# Technologies [2]

- Hybrid approach
- Scientific catalogues
  - primarily in RDF formats
- RDF schemas for resources, users, access policies, etc.
- Distributed, “eventually consistent” column stores may be appropriate for user-related data
- Relational consistency may be appropriate for driving data movement and computation

# VERCE PEs Registry

- Relational
- Restful
  - VERCE gateways (ADMIRE)
  - Execution engines (OGSA-DAI)
- Browsable
- Rough but usable
- Accessible at

<http://escience4.inf.ed.ac.uk:8080/VerceRegistry/>

# Using the Registry for the Exercises

## VERCE Registry - Early Alpha Version

### Training Session, Liverpool, September 2012

Welcome to the early alpha version of the VERCE registry of PEs and related elements. The current version provides users with open, web-based access to registered *PEs* and *Connections* for the purposes of the Liverpool 2012 training session. It is also capable to provide open RESTful access to gateways and execution engines.

You can browse registered *PEs* and their associated *Connections* by clicking the links below

#### Browsable Elements:

- [Processing Elements](#)
- [Connections](#)





# The PE List

[Home](#) [New ProcessingElement](#)

## ProcessingElement List

Name	Date Registered	Description
<a href="#">WaveformStreamPyToSeedFile</a> <a href="#">eu.admire.seismo</a>	2012-08-30 00:00:00 BST	Transform the stream into a seed/miniseed file storing it into a folder whose name is determined by the time range of the traces (eg. 2011-03-18-T00:00:01 - 2011-03-18-T03:00:00/<FileId>.seed
<a href="#">WaveformWhiten</a> <a href="#">eu.admire.seismo</a>	2012-08-30 00:00:00 BST	This filter obtains a flat power spectrum in a given bandwidth and null elsewhere.
<a href="#">InstrumentCorrection</a> <a href="#">eu.admire.seismo</a>	2012-08-30 00:00:00 BST	Removes the response of the instrument from the signal.
<a href="#">RespReader</a> <a href="#">eu.admire.seismo</a>	2012-08-30 00:00:00 BST	Provides a Tuple of Poles and Zero read from a station Response File.
<a href="#">WaveformAppendAndSync</a> <a href="#">eu.admire.seismo</a>	2012-08-30 00:00:00 BST	Merges a list of waveform files into a single seed/miniseed dataset, slicing all the traces according to a window

# PE Details

## Show ProcessingElement

Name **eu.admire.seismo.WaveformStreamPyToSeedFile**

Dateregistered 2012-08-30 00:00:00 BST

Description Transform the stream into a seed/miniseed file storing it into a folder whose name is determined by the time range of the traces (eg. 2011-03-18-T00:00:01 - 2011-03-18-T03:00:00) <Field> seed

Parent PE [eu.verce.registry.domains.ProcessingElement\\_49](#)

Inputs [resource](#)  
[input](#)  
[parameters](#)

Outputs [metadata](#)  
[output](#)

# Connection Details

Show Connection

Name	<b>resource</b>
Kind	IN
DType	Thing
SType	Any
PE	<a href="#">eu.admire.seismo.WaveformStreamPyToSeedFile</a>
Modifiers	locator

# Next Steps

- Fix and secure location of service
  - likely on EDIM1
- Apply backup policies
- Identification of PEs
  - User and session-specific
- Validation and typing semantics
- Integrate with the VERCE Web gateway
- Add support for DISPEL functions