

An Introduction to Cárabos Coop. V.

Francesc Altet

Cárabos Coop. V.



Urbana-Champaign 10/08/07

Who is behind Cárabos

Vicent Mas



Ph.D. in Chemistry
He enjoys
undertaking
hazardous projects,
such as writing
doctoral theses on
Quantum Chemistry
or making a living
developing Free
Software.

“I never get angry”

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What he does (in a few words)

- The main developer of ViTables
- In charge of other R&D projects, such as medical image processing
- Teaches courses on Free Software applications and systems
- Occasional developer of PyTables
- Any other required task

Who is behind Cárabos

Ivan Vilata



Computer Science
Engineer

Thanks to his work,
Cárabos systems
function smoothly,
without falling into
chaos.

“I am a believer in
Free Software”

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What he does (in a few words)

- One of the main developers of PyTables
- Supports PyTables users through the mailing list
- Also offers training services on security, Free Software applications and systems
- In charge of the system administration and security of our servers
- Any other required task

Who is behind Cárabos

Francesc Altet



B. Sc. in Physics
Master in App. Math.

With more than a decade of professional experience in the IT field, he decided to create his own company because “I like freedom”

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What he does (in a few words)

- One of the main developers of PyTables
- Supports PyTables users through the mailing list
- Guiltily gets pleasure acting as the General Manager of the company
- Any other required task



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Products (I)

- PyTables

- Object-oriented interface to HDF5 using Python
- Emphasis on interactive usability even when dealing with very large amounts of data
- Free software

- PyTables Pro

- Added OPSI (indexing engine) to regular PyTables
- Oriented towards production systems
- Commercial software

Products (II)

■ ViTables

- Graphical User Interface for PyTables
- Browse large tables in almost real time
- No practical limits to the size of datasets
- Allows us to take advantage of PyTables features
- Commercial software

■ CSTables

- Prototype client-server to PyTables (1.0 series)
- Supports write/read concurrency
- Stopped right now (but willing to continue!)

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ViTables 1.2

FileNodeQueryWindowsToolsHelp

Object tree

large_table.h5

Particles

TParticle

nested-tut.h5

table2

table

tutorial1.h5

columns

detector

readout

table1.h5

newgroup

table

vlarray3.h5

Query results

TParticle Sample set of particles

	lati	longi	temperature	pressure
9098124	9098123	-9098113	9098123.5	-9098112.
9098125	9098124	-9098114	9098124.5	-9098113.
9098126	9098125	-9098115	9098125.5	-9098114.
9098127	9098126	-9098116	9098126.5	-9098115.
9098128	9098127	-9098117	9098127.5	-9098116.
9098129	9098128	-9098118	9098128.5	-9098117.
9098130	9098129	-9098119	9098129.5	-9098118.
9098131	9098130	-9098120	9098130.5	-9098119.
9098132	9098131	-9098121	9098131.5	-9098120.
9098133	9098132	-9098122	9098132.5	-9098121.
9098134	9098133	-9098123	9098133.5	-9098122.
9098135	9098134	-9098124	9098134.5	-9098123.
9098136	9098135	-9098125	9098135.5	-9098124.
9098137	9098136	-9098126	9098136.5	-9098125.
9098138	9098137	-9098127	9098137.5	-9098126.
9098139	9098138	-9098128	9098138.5	-9098127.
9098140	9098139	-9098129	9098139.5	-9098128.
9098141	9098140	-9098130	9098140.5	-9098129.
9098142	9098141	-9098131	9098141.5	-9098130.

Row: 9,098,140

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Creating the Query results file...

OK!

Recovering last session...

Recovering finished.

Selected node: /Particles/TParticle



New query on table: readout



Global options

Name:

☒ Original indices into column:

Query condition

*



where



energy



Range of rows

Start:

Stop:

Step:

OK

Cancel

What's This

Features of PyTables Pro

- OPSI (Optimized Partially Sorted Indexes)
 - Indexing engine optimized for HDF5 features (chunking, compression, data types)
- Improved LRU node cache performance (up to 20x faster than PyTables Standard)
- Focus on stability (meant for usage in production environments)
- All-in-one installers for Windows and Mac OS X

Our users and customers (I)

Our products are used in fields where management of very large amounts of data is required: data mining, image processing, medicine, economic forecasting, geographic information systems, aeronautics, bioinformatics...

Our users and customers (II)

- The HDF group
- Companies: Acusim Software, Germanisher Lloyd AG, Gulfstream Aerospace Corporation
- Research labs and universities: MIT, Jet Propulsion Lab, UC Berkeley
- Others: National Oceanic & Atmospheric Administration, European Space Agency

That's All Folks!

Any questions?