

# Firebird drivers for Python

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# Agenda

- Driver 1: KinterbasDB
- Driver 2: firebirdsql
- Driver 3: fdb
- The Future

# KInterbasDB

- Current version - 3.3.0
- Supports: Python 2.6/2.7, Firebird 2.0+
- Written in Python and C (extension)
- Extensive list of features
- Adopted by Firebird Project

# KinterbasDB - Features

- Python DB API 2.0 (with extensions)
- Prepared statements
- Transactions:
  - Transaction parameters
  - Multiple transactions per connection
  - Distributed transactions
  - Savepoints
  - Retaining

# KinterbasDB – Features (cont.)

- Named cursors
- Parameter conversions:
  - Implicit Conversion of Input Parameters from Strings
  - Dynamic Type Translation with custom translators support
- Materialized and streamed BLOBs
- Support for Firebird Arrays
- Services (but no Trace)

# KinterbasDB – Features (cont.)

- Connection timeouts (with user callbacks)
- Firebird Events
- Database INFO API

# KinterbasDB - Shortcomings

- No Python 3 support
- Only for CPython
- Very complex code
- Backward compatibility baggage
- No active development

# firebirdsql

- Created by Hajime Nakagami
- Current version: 0.6.3
- Pure-Python driver on top of Firebird wire protocol
- Supports: Python 3.0+/2.6+, Firebird 2.0+?
- Primary development for Python 3/FB 2.5



# Firebirdsql - Features

- Supports Python DB API 2.0 (+row\_mapping)
- Multiple transactions per connection, savepoints, retaining
- Prepared statements
- Firebird Services, partial:  
info, backup/restore, sweep, TRACE
- Potentially works on other Python implementations
- Unicode/Character set conversions

# Firebirdsql - Shortcomings

- No transaction parameters
- No stored procedures (yet)
- No RETURNING
- No streamed BLOBs, No BLOB parameters
- No Firebird Arrays
- Only remote server support
- Limited support for SQL dialect 1
- Still NOT usable for production

# fdb

- Based on old experiment with ctypes module
- Created for this conference
- Pure-Python driver on top of Firebird client library (using ctypes)
- Supports Python 2.6+, Firebird 2.0+
- Primary development for Python 2.6/FB 2.5
- Potentially runs on Python 3 and IronPython

# Fdb - Features

- Supports Python DB API 2.0 (+row\_mapping)
- Multiple transactions per connection, transaction parameters, savepoints, retaining
- Unicode/Character set conversions
- Firebird Services, partial: everything KinterbasDB does (i.e. NO TRACE)

# Fdb - Shortcomings

- No stored procedures (yet)
- No RETURNING
- No streamed BLOBs
- No Firebird Arrays
- No prepared statements
- NOT production ready, but in many aspects more mature than firebirdsql

# The Future

- Finish fdb as drop-in replacement for KinterbasDB
- Abstract the “inner API”:
  - ctypes implementation
  - wire protocol
- ...
- Profit!

# Questions?

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