

Scalaris Python API

API Documentation

March 2, 2016

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1 Module *scalaris*

1.1 Functions

str_to_list(*value*)

Converts a string to a list of integers. If the expected value of a read operation is a list, the returned value could be (mistakenly) a string if it is a list of integers.

1.2 Variables

Name	Description
DEFAULT_URL	default URL and port to a scalaris node Value: 'http://localhost:8000'
DEFAULT_PATH	path to the json rpc page Value: '/jsonrpc.yaws'
--package--	Value: None

1.3 Class *JSONConnection*

object └─ **scalaris.JSONConnection**

Abstracts connections to scalaris using JSON

1.3.1 Methods

__init__(*self*, *url*='http://localhost:8000', *timeout*=None)

Creates a JSON connection to the given URL using the given TCP timeout

Overrides: object.__init__

callp(*self*, *path*, *function*, *params*, *retry_if_bad_status*=True)

call(*self*, *function*, *params*, *path*='/jsonrpc.yaws', *retry_if_bad_status*=True)

Calls the given function with the given parameters via the JSON interface of scalaris.

encode_value(*value*)

Encodes the value to the form required by the scalaris JSON API

decode_value(*value*)

Decodes the value from the scalaris JSON API form to a native type

check_fail_abort(*result*)

Processes the result of some Scalaris operation and raises a TimeoutError if found.

process_result_read(*result*)

Processes the result of a read operation. Returns the read value on success. Raises the appropriate exception if the operation failed.

process_result_write(*result*)

Processes the result of a write operation. Raises the appropriate exception if the operation failed.

process_result_commit(*result*)

Processes the result of a commit operation. Raises the appropriate exception if the operation failed.

process_result_add_del_on_list(*result*)

Processes the result of a add_del_on_list operation. Raises the appropriate exception if the operation failed.

process_result_add_on_nr(*result*)

Processes the result of a add_on_nr operation. Raises the appropriate exception if the operation failed.

process_result_test_and_set(*result*)

Processes the result of a test_and_set operation. Raises the appropriate exception if the operation failed.

process_result_delete(*result*)

Processes the result of a delete operation. Returns the tuple (<success ('True' | 'timeout')>, <number of deleted items>, <detailed results>) on success. Raises the appropriate exception if the operation failed.

create_delete_result(*result*)

Creates a new DeleteResult from the given result list.

process_result_req_list_t(*result*)

Processes the result of a req_list operation of the Transaction class. Returns the tuple (<tlog>, <result>) on success. Raises the appropriate exception if the operation failed.

process_result_req_list_tso(*result*)

Processes the result of a req_list operation of the TransactionSingleOp class. Returns <result> on success. Raises the appropriate exception if the operation failed.

process_result_vm_get_version(*result*)

Processes the result of a `api.vm/get.version` operation. Raises the appropriate exception if the operation failed.

process_result_vm_get_info(*result*)

Processes the result of a `api.vm/get.info` operation. Raises the appropriate exception if the operation failed.

process_result_vm_get_number_of_nodes(*result*)

Processes the result of a `api.vm/number_of_nodes` operation. Raises the appropriate exception if the operation failed.

process_result_vm_get_nodes(*result*)

Processes the result of a `api.vm/get.nodes` operation. Raises the appropriate exception if the operation failed.

process_result_vm_add_nodes(*result*)

Processes the result of a `api.vm/add.nodes` operation. Raises the appropriate exception if the operation failed.

process_result_vm_delete_node(*result*)

Processes the result of a `api.vm/shutdown_node` and `api.vm/kill_node` operations. Raises the appropriate exception if the operation failed.

process_result_vm_delete_nodes(*result*)

Processes the result of a `api.vm/shutdown_nodes` and `api.vm/kill_nodes` operations. Raises the appropriate exception if the operation failed.

process_result_vm_delete_nodes_by_name(*result*)

Processes the result of a `api.vm/shutdown_nodes_by_name` and `api.vm/kill_nodes_by_name` operations. Raises the appropriate exception if the operation failed.

process_result_vm_delete_vm(*result*)

Processes the result of a `api.vm/shutdown_vm` and `api.vm/kill_vm` operations. Raises the appropriate exception if the operation failed.

process_result_vm_get_other_vms(*result*)

Processes the result of a `api.vm/get.other_vms` operation. Raises the appropriate exception if the operation failed.

process_result_autoscale_check_config(*result*)

<code>process_result_autoscale_pull_scale_req(result)</code>
--

<code>process_result_autoscale_lock_scale_req(result)</code>
--

<code>process_result_autoscale_unlock_scale_req(result)</code>
--

<code>process_result_nop(result)</code>

Processes the result of a nop operation. Raises the appropriate exception if the operation failed.
--

<code>new_req_list_t(other=None)</code>

Returns a new ReqList object allowing multiple parallel requests for the Transaction class.

<code>new_req_list_tso(other=None)</code>

Returns a new ReqList object allowing multiple parallel requests for the TransactionSingleOp class.

<code>close(self)</code>

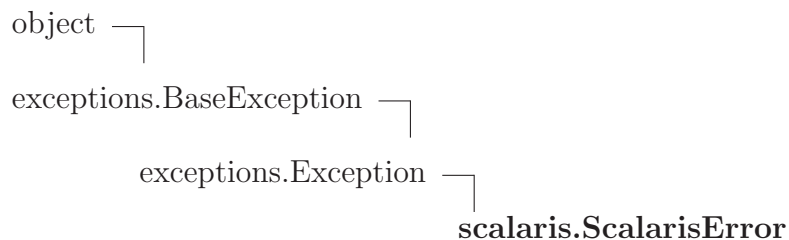
Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__repr__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

1.3.2 Properties

Name	Description
<i>Inherited from object</i>	
<code>__class__</code>	

1.4 Class `ScalarisError`



Known Subclasses: `scalaris.AbortError`, `scalaris.ConfigError`, `scalaris.ConnectionError`, `scalaris.KeyChangedError`, `scalaris.LockError`, `scalaris.NodeNotFoundError`, `scalaris.NotAListError`,

`scalaris.NotANumberError`, `scalaris.NotFoundError`, `scalaris.TimeoutError`, `scalaris.UnknownError`
 Base class for errors in the `scalaris` package.

1.4.1 Methods

Inherited from `exceptions.Exception`

`__init__()`, `__new__()`

Inherited from `exceptions.BaseException`

`__delattr__()`, `__getattr__()`, `__getitem__()`, `__getslice__()`, `__reduce__()`, `__repr__()`,
`__setattr__()`, `__setstate__()`, `__str__()`, `__unicode__()`

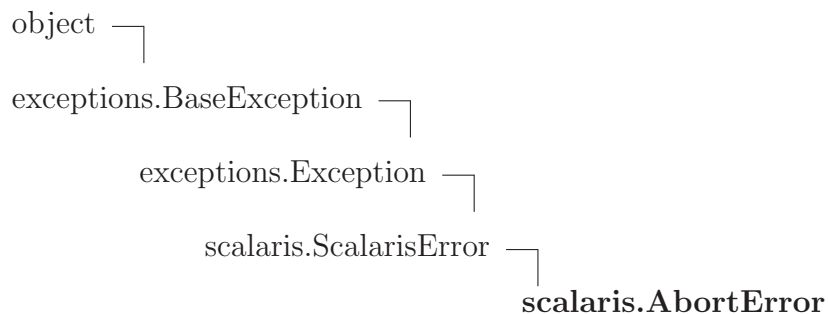
Inherited from `object`

`__format__()`, `__hash__()`, `__reduce_ex__()`, `__sizeof__()`, `__subclasshook__()`

1.4.2 Properties

Name	Description
<i>Inherited from <code>exceptions.BaseException</code></i>	
<code>args</code> , <code>message</code>	
<i>Inherited from <code>object</code></i>	
<code>__class__</code>	

1.5 Class `AbortError`



Exception that is thrown if a the commit of a write operation on a `scalaris` ring fails.

1.5.1 Methods

```
__init__(self, raw_result, failed_keys)
```

`x.__init__(...)` initializes `x`; see `x.__class__.__doc__` for signature

Overrides: `object.__init__` extit(inherited documentation)

```
__str__(self)
```

`str(x)`

Overrides: `object.__str__` extit(inherited documentation)

Inherited from exceptions.Exception

```
__new__()
```

Inherited from exceptions.BaseException

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),  
__setattr__(), __setstate__(), __unicode__()
```

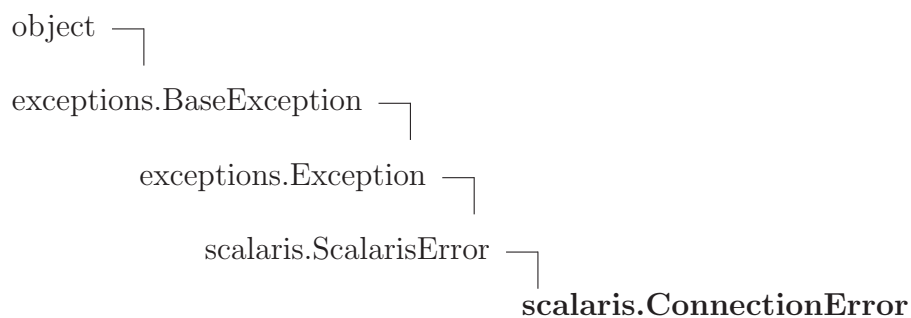
Inherited from object

```
__format__(), __hash__(), __reduce_ex__(), __sizeof__(), __subclasshook__()
```

1.5.2 Properties

Name	Description
<i>Inherited from exceptions.BaseException</i>	
<code>args</code> , <code>message</code>	
<i>Inherited from object</i>	
<code>__class__</code>	

1.6 Class `ConnectionError`



Exception that is thrown if an operation on a scalaris ring fails because a connection does not exist or has been disconnected.

1.6.1 Methods

```
__init__(self, raw_result, response=None, error=None)
```

`x.__init__(...)` initializes `x`; see `x.__class__.__doc__` for signature

Overrides: `object.__init__` extit(inherited documentation)

```
__str__(self)
```

`str(x)`

Overrides: `object.__str__` extit(inherited documentation)

Inherited from `exceptions.Exception`

```
__new__()
```

Inherited from `exceptions.BaseException`

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),  
__setattr__(), __setstate__(), __unicode__()
```

Inherited from `object`

```
__format__(), __hash__(), __reduce_ex__(), __sizeof__(), __subclasshook__()
```

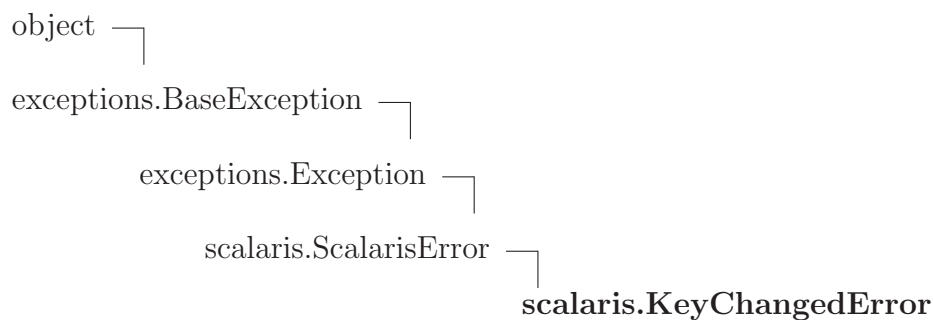
1.6.2 Properties

Name	Description
<i>Inherited from <code>exceptions.BaseException</code></i>	

continued on next page

Name	Description
args, message	
<i>Inherited from object</i>	
__class__	

1.7 Class `KeyChangedError`



Exception that is thrown if a `test_and_set` operation on a scalaris ring fails because the old value did not match the expected value.

1.7.1 Methods

```
__init__(self, raw_result, old_value)

x.__init__(...) initializes x; see x.__class__.__doc__ for signature
Overrides: object.__init__ extit(inherited documentation)
```

```
__str__(self)

str(x)
Overrides: object.__str__ extit(inherited documentation)
```

Inherited from `exceptions.Exception`

```
__new__()
```

Inherited from `exceptions.BaseException`

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),
__setattr__(), __setstate__(), __unicode__()
```

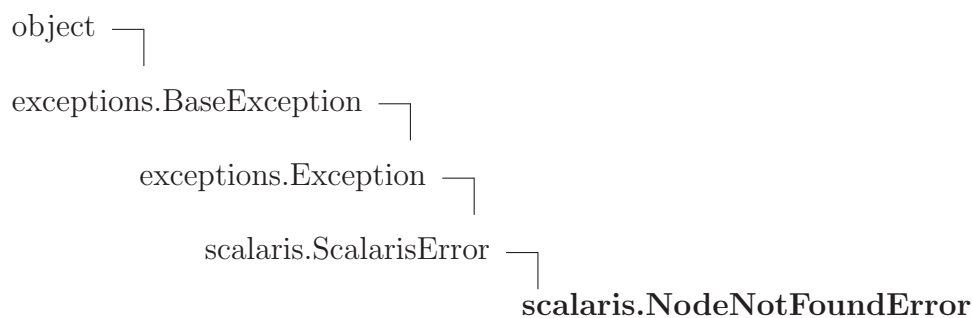
Inherited from `object`

```
__format__(), __hash__(), __reduce_ex__(), __sizeof__(), __subclasshook__()
```

1.7.2 Properties

Name	Description
<i>Inherited from <code>exceptions.BaseException</code></i>	
<code>args</code> , <code>message</code>	
<i>Inherited from <code>object</code></i>	
<code>__class__</code>	

1.8 Class `NodeNotFoundError`



Exception that is thrown if a delete operation on a scalaris ring fails because no scalaris node was found.

1.8.1 Methods

```
__init__(self, raw_result)
```

`x.__init__(...)` initializes `x`; see `x.__class__.__doc__` for signature
 Overrides: `object.__init__` `__init__`(inherited documentation)

```
__str__(self)
```

`str(x)`
 Overrides: `object.__str__` `__str__`(inherited documentation)

Inherited from `exceptions.Exception`

```
__new__()
```

Inherited from `exceptions.BaseException`

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),  

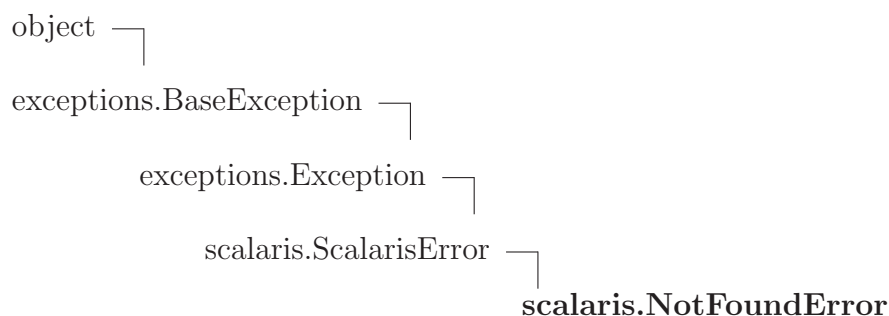
__setattr__(), __setstate__(), __unicode__()
```

Inherited from object

`__format__()`, `__hash__()`, `__reduce_ex__()`, `__sizeof__()`, `__subclasshook__()`

1.8.2 Properties

Name	Description
<i>Inherited from <code>exceptions.BaseException</code></i>	
<code>args</code> , <code>message</code>	
<i>Inherited from object</i>	
<code>__class__</code>	

1.9 Class `NotFoundError`

Exception that is thrown if a read operation on a scalaris ring fails because the key did not exist before.

1.9.1 Methods

<code>__init__(self, raw_result)</code> <code>x.__init__(...)</code> initializes <code>x</code> ; see <code>x.__class__.__doc__</code> for signature Overrides: <code>object.__init__</code> <code>exitit</code> (inherited documentation)
<code>__str__(self)</code> <code>str(x)</code> Overrides: <code>object.__str__</code> <code>exitit</code> (inherited documentation)

Inherited from `exceptions.Exception`

`__new__()`

Inherited from `exceptions.BaseException`

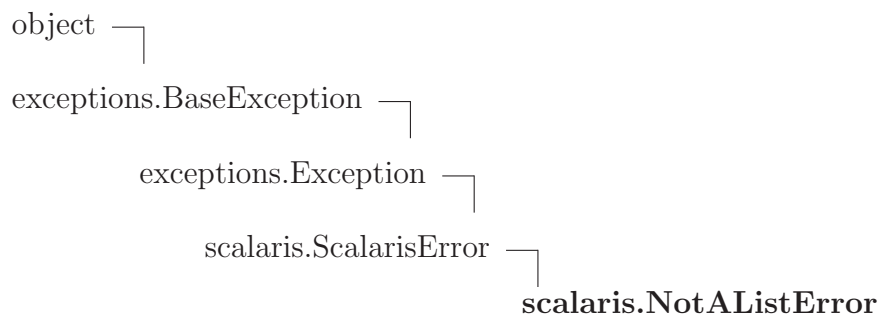
`__delattr__()`, `__getattr__()`, `__getitem__()`, `__getslice__()`, `__reduce__()`, `__repr__()`,
`__setattr__()`, `__setstate__()`, `__unicode__()`

Inherited from `object`

`__format__()`, `__hash__()`, `__reduce_ex__()`, `__sizeof__()`, `__subclasshook__()`

1.9.2 Properties

Name	Description
<i>Inherited from <code>exceptions.BaseException</code></i>	
<code>args</code> , <code>message</code>	
<i>Inherited from <code>object</code></i>	
<code>__class__</code>	

1.10 Class `NotAListError`

Exception that is thrown if a `add_del_on_list` operation on a `scalaris` ring fails because the participating values are not lists.

1.10.1 Methods

<code>__init__(self, raw_result)</code>
<code>x.__init__(...)</code> initializes <code>x</code> ; see <code>x.__class__.__doc__</code> for signature
Overrides: <code>object.__init__</code> <code>extit</code> (inherited documentation)

```
__str__(self)

str(x)

Overrides: object.__str__ extit(inherited documentation)
```

Inherited from exceptions.Exception

```
__new__()
```

Inherited from exceptions.BaseException

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),
__setattr__(), __setstate__(), __unicode__()
```

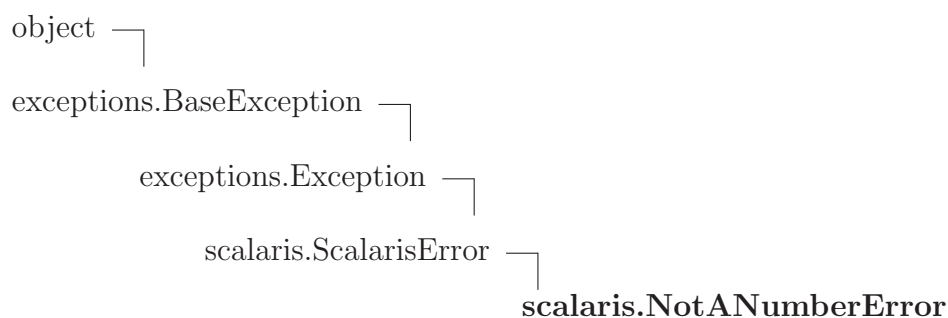
Inherited from object

```
__format__(), __hash__(), __reduce_ex__(), __sizeof__(), __subclasshook__()
```

1.10.2 Properties

Name	Description
<i>Inherited from exceptions.BaseException</i>	
args, message	
<i>Inherited from object</i>	
__class__	

1.11 Class NotANumberError



Exception that is thrown if a `add_del_on_list` operation on a scalaris ring fails because the participating values are not numbers.

1.11.1 Methods

```
__init__(self, raw_result)
```

x.**__init__**(...) initializes *x*; see *x*.**__class__**.**__doc__** for signature

Overrides: *object*.**__init__** extit(inherited documentation)

```
__str__(self)
```

str(*x*)

Overrides: *object*.**__str__** extit(inherited documentation)

Inherited from exceptions.Exception

```
__new__()
```

Inherited from exceptions.BaseException

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),  
__setattr__(), __setstate__(), __unicode__()
```

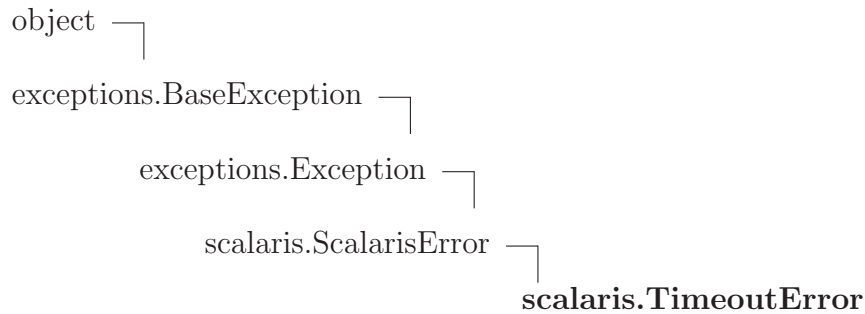
Inherited from object

```
__format__(), __hash__(), __reduce_ex__(), __sizeof__(), __subclasshook__()
```

1.11.2 Properties

Name	Description
<i>Inherited from exceptions.BaseException</i>	
<i>args</i> , <i>message</i>	
<i>Inherited from object</i>	
__class__	

1.12 Class `TimeoutError`



Exception that is thrown if a read or write operation on a scalaris ring fails due to a timeout.

1.12.1 Methods

```
__init__(self, raw_result)

x.__init__(...) initializes x; see x.__class__.__doc__ for signature
Overrides: object.__init__ extit(inherited documentation)
```

```
__str__(self)

str(x)
Overrides: object.__str__ extit(inherited documentation)
```

Inherited from `exceptions.Exception`

```
__new__()
```

Inherited from `exceptions.BaseException`

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),
__setattr__(), __setstate__(), __unicode__()
```

Inherited from `object`

```
__format__(), __hash__(), __reduce_ex__(), __sizeof__(), __subclasshook__()
```

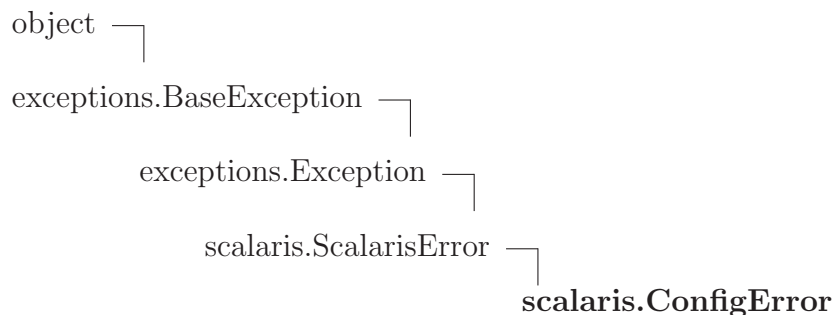
1.12.2 Properties

Name	Description
<i>Inherited from <code>exceptions.BaseException</code></i>	
args, message	

continued on next page

Name	Description
<i>Inherited from object</i>	
__class__	

1.13 Class ConfigError



Exception that is thrown if a autoscale operation fails, because it was not configured correctly.

1.13.1 Methods

```
__init__(self, raw_result)
x.__init__(...) initializes x; see x.__class__.__doc__ for signature
Overrides: object.__init__ extit(inherited documentation)
```

```
__str__(self)
str(x)
Overrides: object.__str__ extit(inherited documentation)
```

Inherited from exceptions.Exception

```
__new__()
```

Inherited from exceptions.BaseException

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),
__setattr__(), __setstate__(), __unicode__()
```

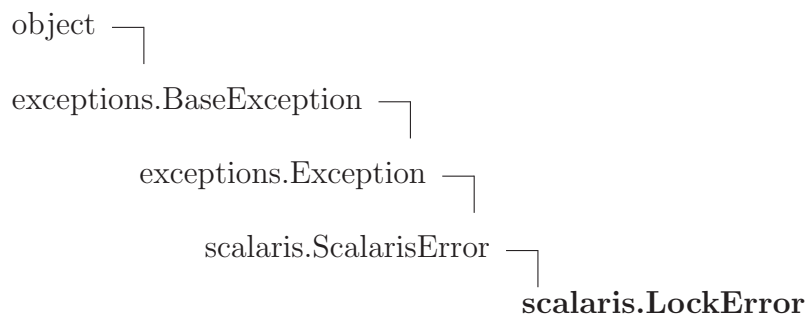
Inherited from object

```
__format__(), __hash__(), __reduce_ex__(), __sizeof__(), __subclasshook__()
```

1.13.2 Properties

Name	Description
<i>Inherited from <code>exceptions.BaseException</code></i>	
<code>args</code> , <code>message</code>	
<i>Inherited from <code>object</code></i>	
<code>__class__</code>	

1.14 Class `LockError`



Exception that is thrown if a autoscale lock/unlock operation fails, because of a wrong lock state, i.e. lock when is already locked or unlock when not locked.

1.14.1 Methods

```
__init__(self, raw_result)
```

`x.__init__(...)` initializes `x`; see `x.__class__.__doc__` for signature
 Overrides: `object.__init__` `__init__`(inherited documentation)

```
__str__(self)
```

`str(x)`
 Overrides: `object.__str__` `__str__`(inherited documentation)

Inherited from `exceptions.Exception`

```
__new__()
```

Inherited from `exceptions.BaseException`

```
__delattr__(), __getattr__(), __getitem__(), __getslice__(), __reduce__(), __repr__(),  

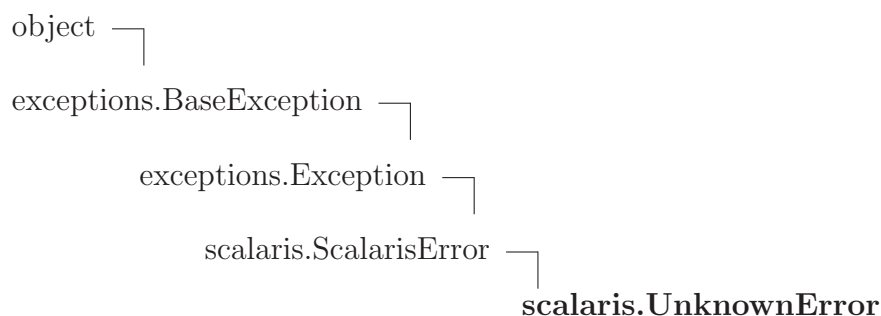
__setattr__(), __setstate__(), __unicode__()
```

Inherited from object

`__format__()`, `__hash__()`, `__reduce_ex__()`, `__sizeof__()`, `__subclasshook__()`

1.14.2 Properties

Name	Description
<i>Inherited from <code>exceptions.BaseException</code></i>	
<code>args</code> , <code>message</code>	
<i>Inherited from object</i>	
<code>__class__</code>	

1.15 Class `UnknownError`

Generic exception that is thrown during operations on a scalaris ring, e.g. if an unknown result has been returned.

1.15.1 Methods

<code>__init__(self, raw_result)</code> <code>x.__init__(...)</code> initializes <code>x</code> ; see <code>x.__class__.__doc__</code> for signature Overrides: <code>object.__init__</code> <code>__init__</code> (inherited documentation)
<code>__str__(self)</code> <code>str(x)</code> Overrides: <code>object.__str__</code> <code>__str__</code> (inherited documentation)

Inherited from `exceptions.Exception`

`__new__()`

Inherited from exceptions.BaseException

`__delattr__()`, `__getattr__()`, `__getitem__()`, `__getslice__()`, `__reduce__()`, `__repr__()`,
`__setattr__()`, `__setstate__()`, `__unicode__()`

Inherited from object

`__format__()`, `__hash__()`, `__reduce_ex__()`, `__sizeof__()`, `__subclasshook__()`

1.15.2 Properties

Name	Description
<i>Inherited from exceptions.BaseException</i>	
args, message	
<i>Inherited from object</i>	
__class__	

1.16 Class DeleteResult

object └─
scalaris.DeleteResult

Stores the result of a delete operation.

1.16.1 Methods

__init__ (<i>self, ok, locks_set, undefined</i>)
x. __init__ (...) initializes x; see x. __class__ . __doc__ for signature
Overrides: object. __init__ extit(inherited documentation)

Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`,
`__repr__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

1.16.2 Properties

Name	Description
<i>Inherited from object</i>	
__class__	

1.17 Class *ConnectionPool*

object └─
scalaris.ConnectionPool

Implements a simple (thread-safe) connection pool for *Scalaris* connections.

1.17.1 Methods

__init__(*self*, *max_connections*)

Create a new connection pool with the given maximum number of connections.
 Overrides: *object.__init__*

get_connection(*self*, *timeout=None*)

Tries to get a valid connection from the pool waiting at most the given timeout. If timeout is an integer, it will be interpreted as a number of milliseconds. Alternatively, timeout can be given as a *datetime.timedelta*. Creates a new connection if necessary and the maximum number of connections has not been hit yet. If the timeout is hit and no connection is available, `None` is returned.

release_connection(*self*, *connection*)

Puts the given connection back into the pool.

close_all(*self*)

Close all connections to *scalaris*.

Inherited from object

__delattr__(), *__format__*(), *__getattr__*(), *__hash__*(), *__new__*(), *__reduce__*(), *__reduce_ex__*(), *__repr__*(), *__setattr__*(), *__sizeof__*(), *__str__*(), *__subclasshook__*()

1.17.2 Properties

Name	Description
<i>Inherited from object</i>	
<i>__class__</i>	

1.18 Class TransactionSingleOp

object └─ scalaris.TransactionSingleOp

Single write or read operations on scalaris.

1.18.1 Methods

__init__(*self*, *conn*=None)

Create a new object using the given connection

Overrides: object.__init__

new_req_list(*self*, *other*=None)

Returns a new ReqList object allowing multiple parallel requests.

req_list(*self*, *reqlist*)

Issues multiple parallel requests to scalaris; each will be committed. NOTE: The execution order of multiple requests on the same key is undefined! Request lists can be created using new_req_list(). The returned list has the following form: [{*'status'*: *'ok'*} or {*'status'*: *'ok'*, *'value'*: xxx} or {*'status'*: *'fail'*, *'reason'*: *'timeout'* or *'abort'* or *'not_found'*}}]. Elements of this list can be processed with process_result_read() and process_result_write().

process_result_read(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a read operation. Returns the read value on success. Raises the appropriate exceptions if a failure occurred during the operation. Beware: lists of (small) integers may be (falsely) returned as a string - use str_to_list() to convert such strings.

process_result_write(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a write operation. Raises the appropriate exceptions if a failure occurred during the operation.

process_result_add_del_on_list(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a add_del_on_list operation. Raises the appropriate exceptions if a failure occurred during the operation.

process_result_add_on_nr(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a add_on_nr operation. Raises the appropriate exceptions if a failure occurred during the operation.

process_result_test_and_set(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a test_and_set operation. Raises the appropriate exceptions if a failure occurred during the operation.

read(*self*, *key*)

Read the value at key. Beware: lists of (small) integers may be (falsely) returned as a string - use str_to_list() to convert such strings.

write(*self*, *key*, *value*)

Write the value to key.

add_del_on_list(*self*, *key*, *to_add*, *to_remove*)

Changes the list stored at the given key, i.e. first adds all items in to_add then removes all items in to_remove. Both, to_add and to_remove, must be lists. Assumes an empty list if no value exists at key.

add_on_nr(*self*, *key*, *to_add*)

Changes the number stored at the given key, i.e. adds some value. Assumes 0 if no value exists at key.

test_and_set(*self*, *key*, *old_value*, *new_value*)

Atomic test and set, i.e. if the old value at key is old_value, then write new_value.

nop(*self*, *value*)

No operation (may be used for measuring the JSON overhead).

close_connection (<i>self</i>)

Close the connection to scalaris (it will automatically be re-opened on the next request).
--

Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__repr__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

1.18.2 Properties

Name	Description
<i>Inherited from object</i>	
<code>__class__</code>	

1.19 Class Transaction

object └─ **scalaris.Transaction**

Write or read operations on scalaris inside a transaction.

1.19.1 Methods

__init__ (<i>self</i> , <i>conn</i> =None)
--

Create a new object using the given connection
--

Overrides: <code>object.__init__</code>

new_req_list (<i>self</i> , <i>other</i> =None)

Returns a new ReqList object allowing multiple parallel requests.

req_list (<i>self</i> , <i>reqlist</i>)
--

Issues multiple parallel requests to scalaris. Request lists can be created using <code>new_req_list()</code> . The returned list has the following form: [{ <code>'status': 'ok'</code> } or { <code>'status': 'ok', 'value': xxx</code> } or { <code>'status': 'fail', 'reason': 'timeout' or 'abort' or 'not_found'</code> }}]. Elements of this list can be processed with <code>process_result_read()</code> and <code>process_result_write()</code> . A commit (at the end of the request list) will be automatically checked for its success.
--

process_result_read(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a read operation. Returns the read value on success. Raises the appropriate exceptions if a failure occurred during the operation. Beware: lists of (small) integers may be (falsely) returned as a string - use str_to_list() to convert such strings.

process_result_write(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a write operation. Raises the appropriate exceptions if a failure occurred during the operation.

process_result_add_del_on_list(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a add_del_on_list operation. Raises the appropriate exceptions if a failure occurred during the operation.

process_result_add_on_nr(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a add_on_nr operation. Raises the appropriate exceptions if a failure occurred during the operation.

process_result_test_and_set(*self*, *result*)

Processes a result element from the list returned by req_list() which originated from a test_and_set operation. Raises the appropriate exceptions if a failure occurred during the operation.

commit(*self*)

Issues a commit operation to scalaris validating the previously created operations inside the transaction.

abort(*self*)

Aborts all previously created operations inside the transaction.

read(*self*, *key*)

Issues a read operation to scalaris, adds it to the current transaction and returns the result. Beware: lists of (small) integers may be (falsely) returned as a string - use str_to_list() to convert such strings.

write(*self*, *key*, *value*)

Issues a write operation to scalaris and adds it to the current transaction.

add_del_on_list(*self*, *key*, *to_add*, *to_remove*)

Issues a add_del_on_list operation to scalaris and adds it to the current transaction. Changes the list stored at the given key, i.e. first adds all items in to_add then removes all items in to_remove. Both, to_add and to_remove, must be lists. Assumes an empty list if no value exists at key.

add_on_nr(*self*, *key*, *to_add*)

Issues a add_on_nr operation to scalaris and adds it to the current transaction. Changes the number stored at the given key, i.e. adds some value. Assumes 0 if no value exists at key.

test_and_set(*self*, *key*, *old_value*, *new_value*)

Issues a test_and_set operation to scalaris and adds it to the current transaction. Atomic test and set, i.e. if the old value at key is old_value, then write new_value.

nop(*self*, *value*)

No operation (may be used for measuring the JSON overhead).

close_connection(*self*)

Close the connection to scalaris (it will automatically be re-opened on the next request).

Inherited from object

`__delattr__()`, `__format__()`, `__getattribute__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__repr__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

1.19.2 Properties

Name	Description
<i>Inherited from object</i>	
<code>__class__</code>	

1.20 Class *ReplicatedDHT*



Non-transactional operations on the replicated DHT of *scalaris*

1.20.1 Methods

`__init__(self, conn=None)`

Create a new object using the given connection.

Overrides: `object.__init__`

`delete(self, key, timeout=2000)`

Tries to delete the value at the given key.

WARNING: This function can lead to inconsistent data (e.g. deleted items can re-appear). Also when re-creating an item the version before the delete can re-appear.

`get_last_delete_result(self)`

Returns the result of the last call to `delete()`.

NOTE: This function traverses the result list returned by *scalaris* and therefore takes some time to process. It is advised to store the returned result object once generated.

`nop(self, value)`

No operation (may be used for measuring the JSON overhead).

`close_connection(self)`

Close the connection to *scalaris* (it will automatically be re-opened on the next request).

Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__repr__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

1.20.2 Properties

Name	Description
<i>Inherited from object</i>	
<code>__class__</code>	

1.21 Class `RoutingTable`



API for using routing tables

1.21.1 Methods

<code>__init__(self, conn=None)</code>
Create a new object using the given connection.
Overrides: <code>object.__init__</code>

<code>get_replication_factor(self)</code>
--

Inherited from object

`__delattr__()`, `__format__()`, `__getattribute__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__repr__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

1.21.2 Properties

Name	Description
<i>Inherited from object</i>	
<code>__class__</code>	

1.22 Class `ScalarisVM`



Provides methods to interact with a specific *Scalaris* (Erlang) VM.

1.22.1 Methods

`__init__(self, conn=None)`

Create a new object using the given connection.

Overrides: `object.__init__`

`getVersion(self)`

Gets the version of the Scalaris VM of the current connection.

`getInfo(self)`

Gets some information about the VM and Scalaris.

`getNumberOfNodes(self)`

Gets the number of nodes in the Scalaris VM of the current connection.

`getNodes(self)`

Gets the names of the nodes in the Scalaris VM of the current connection.

`addNodes(self, number)`

Adds Scalaris nodes to the Scalaris VM of the current connection.

`shutdownNode(self, name)`

Shuts down the given node (graceful leave) in the Scalaris VM of the current connection.

`killNode(self, name)`

Kills the given node in the Scalaris VM of the current connection.

`shutdownNodes(self, number)`

Shuts down the given number of nodes (graceful leave) in the Scalaris VM of the current connection.

`killNodes(self, number)`

Kills the given number of nodes in the Scalaris VM of the current connection.

`shutdownNodesByName(self, names)`

Shuts down the given nodes (graceful leave) in the Scalaris VM of the current connection.

killNodesByName (<i>self</i> , <i>names</i>)

Kills the given nodes in the Scalaris VM of the current connection.

getOtherVMs (<i>self</i> , <i>maxVMs</i>)
--

Retrieves additional nodes from the Scalaris VM of the current connection for use as URLs in JSONConnection.
--

shutdownVM (<i>self</i>)

Tells the Scalaris VM of the current connection to shut down gracefully.
--

killVM (<i>self</i>)

Kills the Scalaris VM of the current connection.
--

nop (<i>self</i> , <i>value</i>)

No operation (may be used for measuring the JSON overhead).

close_connection (<i>self</i>)

Close the connection to scalaris (it will automatically be re-opened on the next request).
--

Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__repr__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

1.22.2 Properties

Name	Description
<i>Inherited from object</i>	
<code>__class__</code>	

1.23 Class Autoscale

object —
scalaris.Autoscale

Provides methods to interact with autoscale API.

1.23.1 Methods

`__init__(self, conn=None)`

`x.__init__(...)` initializes `x`; see `x.__class__.__doc__` for signature

Overrides: `object.__init__` extit(inherited documentation)

`process_result_check_config(self, result)`

`process_result_pull_scale_req(self, result)`

`process_result_lock_scale_req(self, result)`

`process_result_unlock_scale_req(self, result)`

`check_config(self)`

`pull_scale_req(self)`

`lock_scale_req(self)`

`unlock_scale_req(self)`

`close_connection(self)`

Close the connection to scalaris (it will automatically be re-opened on the next request).

Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__repr__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

1.23.2 Properties

Name	Description
<i>Inherited from object</i>	
<code>__class__</code>	

1.23.3 Class Variables

Name	Description
api	Create a new object using the given connection. Value: <code> '/api/autoscale.yaws'</code>

2 Module *scalaris_bench*

2.1 Functions

minibench(*operations*, *threads_per_node*, *benchmarks*)

Default minimal benchmark.

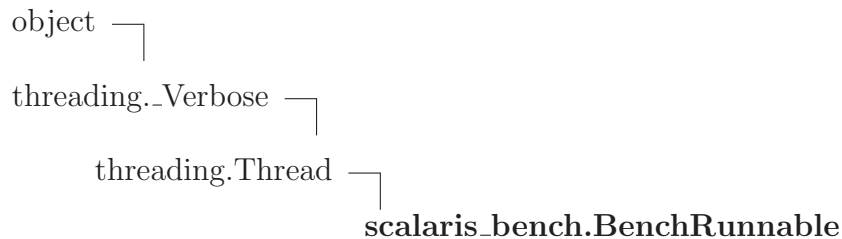
Tests some strategies for writing key/value pairs to scalaris: 1) writing binary objects (random data, size = `_BENCH_DATA_SIZE`) 2) writing string objects (random data, size = `_BENCH_DATA_SIZE`) each with the given number of consecutive operations and parallel threads per Scalaris node, * first using a new `Transaction` or `TransactionSingleOp` for each test, * then using a new `Transaction` or `TransactionSingleOp` but re-using a single connection, * and finally re-using a single `Transaction` or `TransactionSingleOp` object.

run_from_cmd(*argv*)

2.2 Variables

Name	Description
<code>DEFAULT_URLS</code>	Value: ['http://localhost:8000']
<code>__package__</code>	Value: None

2.3 Class *BenchRunnable*



Known Subclasses: `scalaris_bench.BenchRunnable2`, `scalaris_bench.TransAppendToListBench`, `scalaris_bench.TransBench1`, `scalaris_bench.TransBench3`, `scalaris_bench.TransIncrementBench`, `scalaris_bench.TransReadXWriteXBench`, `scalaris_bench.TransSingleOpBench1`, `scalaris_bench.TransSingleOpBench2`

Abstract base class of a test run that is to be run in a thread.

2.3.1 Methods

`__init__(self, key, value, operations)`

Create a new runnable.

Overrides: `object.__init__`

`pre_init(self, j=None)`

Will be called before the benchmark starts with all possible variations of "j" in the `operation()` call. "j" with None is the overall initialisation run at first.

`init(self)`

Will be called at the start of the benchmark.

`cleanup(self)`

Will be called before the end of the benchmark.

`operation(self, j)`

The operation to execute during the benchmark.

`run(self)`

Overrides: `threading.Thread.run`

`getSpeed(self)`

`shouldStop(self)`

Inherited from `threading.Thread`

`__repr__()`, `getName()`, `isAlive()`, `isDaemon()`, `is_alive()`, `join()`, `setDaemon()`, `setName()`, `start()`

Inherited from `object`

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

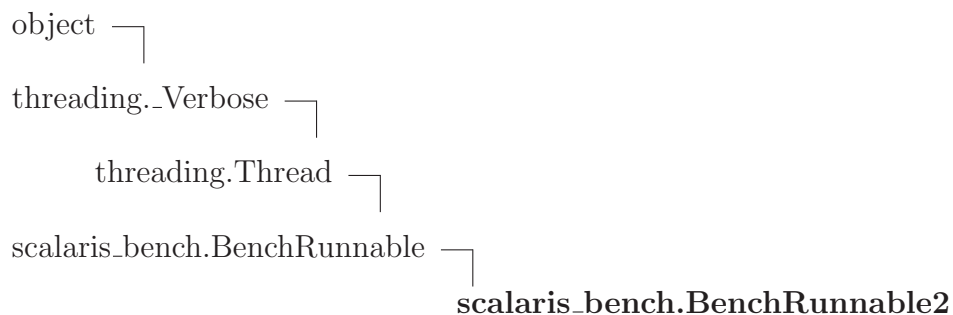
2.3.2 Properties

Name	Description
<i>Inherited from <code>threading.Thread</code></i>	

continued on next page

Name	Description
daemon, ident, name	
<i>Inherited from object</i>	
__class__	

2.4 Class **BenchRunnable2**



Known Subclasses: *scalaris_bench.TransBench2*, *scalaris_bench.TransSingleOpBench2*

2.4.1 Methods

__init__ (<i>self</i> , <i>key</i> , <i>value</i> , <i>operations</i>)
Create a new runnable. Overrides: <i>object.__init__</i>
init (<i>self</i>)
Will be called at the start of the benchmark. Overrides: <i>scalaris_bench.BenchRunnable.init</i>
cleanup (<i>self</i>)
Will be called before the end of the benchmark. Overrides: <i>scalaris_bench.BenchRunnable.cleanup</i>

*Inherited from **scalaris_bench.BenchRunnable**(Section 2.3)*

getSpeed(), *operation()*, *pre_init()*, *run()*, *shouldStop()*

*Inherited from **threading.Thread***

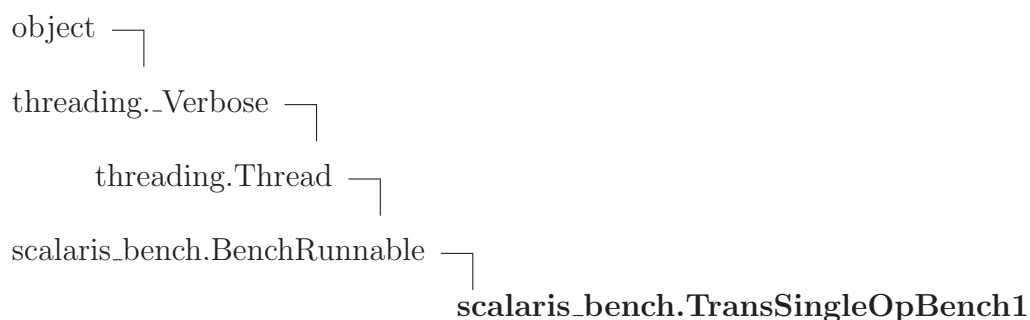
__repr__(), *getName()*, *isAlive()*, *isDaemon()*, *is_alive()*, *join()*, *setDaemon()*, *setName()*, *start()*

Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`,
`__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

2.4.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.5 Class TransSingleOpBench1

Performs a benchmark writing objects using a new TransactionSingleOp object for each test.

2.5.1 Methods

`__init__(self, key, value, operations)`

Create a new runnable.

Overrides: `object.__init__` `exitit`(inherited documentation)

`operation(self, j)`

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` `exitit`(inherited documentation)

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

cleanup(), getSpeed(), init(), pre_init(), run(), shouldStop()

Inherited from threading.Thread

__repr__(), getName(), isAlive(), isDaemon(), is_alive(), join(), setDaemon(), setName(), start()

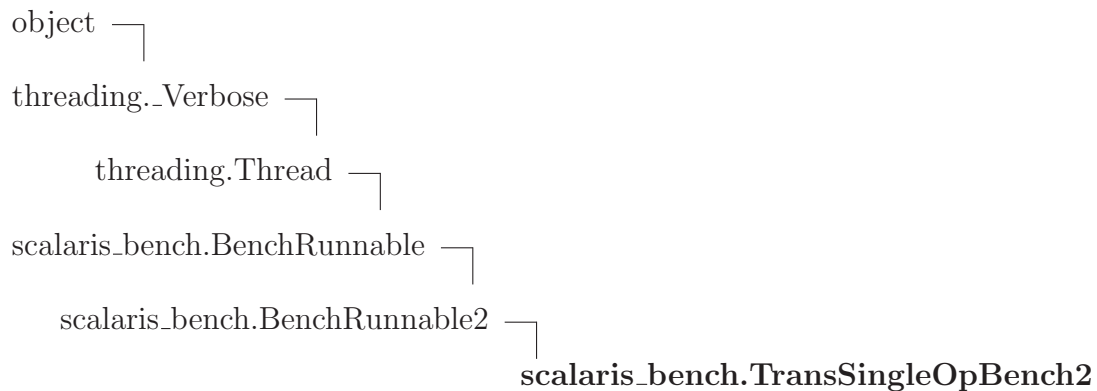
Inherited from object

__delattr__(), __format__(), __getattr__(), __hash__(), __new__(), __reduce__(), __reduce_ex__(), __setattr__(), __sizeof__(), __str__(), __subclasshook__()

2.5.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.6 Class TransSingleOpBench2



Performs a benchmark writing objects using a new TransactionSingleOp but re-using a single connection for each test.

2.6.1 Methods

`__init__(self, key, value, operations)`

Create a new runnable.

Overrides: `object.__init__` `exitit`(inherited documentation)

`operation(self, j)`

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` `exitit`(inherited documentation)

Inherited from `scalaris_bench.BenchRunnable2`(Section 2.4)

`cleanup()`, `init()`

Inherited from `scalaris_bench.BenchRunnable`(Section 2.3)

`getSpeed()`, `pre_init()`, `run()`, `shouldStop()`

Inherited from `threading.Thread`

`__repr__()`, `getName()`, `isAlive()`, `isDaemon()`, `is_alive()`, `join()`, `setDaemon()`, `setName()`, `start()`

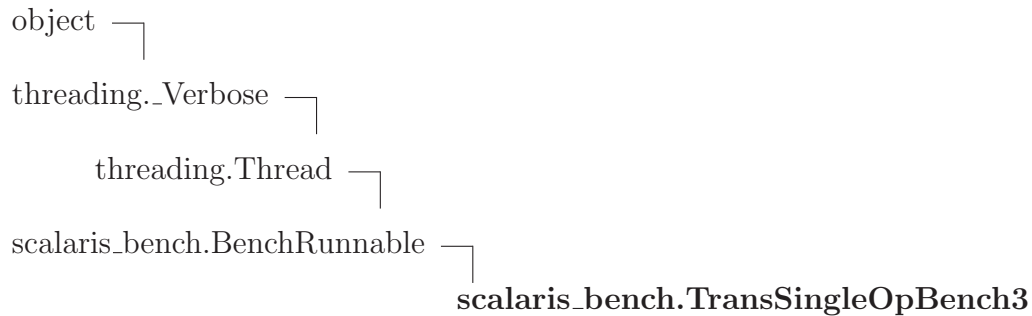
Inherited from `object`

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

2.6.2 Properties

Name	Description
<i>Inherited from <code>threading.Thread</code></i>	
<code>daemon</code> , <code>ident</code> , <code>name</code>	
<i>Inherited from <code>object</code></i>	
<code>__class__</code>	

2.7 Class TransSingleOpBench3



Performs a benchmark writing objects using a single TransactionSingleOp object for all tests.

2.7.1 Methods

__init__(*self*, *key*, *value*, *operations*)

Create a new runnable.

Overrides: object.__init__ extit(inherited documentation)

init(*self*)

Will be called at the start of the benchmark.

Overrides: scalaris_bench.BenchRunnable.init extit(inherited documentation)

cleanup(*self*)

Will be called before the end of the benchmark.

Overrides: scalaris_bench.BenchRunnable.cleanup extit(inherited documentation)

operation(*self*, *j*)

The operation to execute during the benchmark.

Overrides: scalaris_bench.BenchRunnable.operation extit(inherited documentation)

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

getSpeed(), pre_init(), run(), shouldStop()

Inherited from threading.Thread

`__repr__()`, `getName()`, `isAlive()`, `isDaemon()`, `is_alive()`, `join()`, `setDaemon()`, `setName()`, `start()`

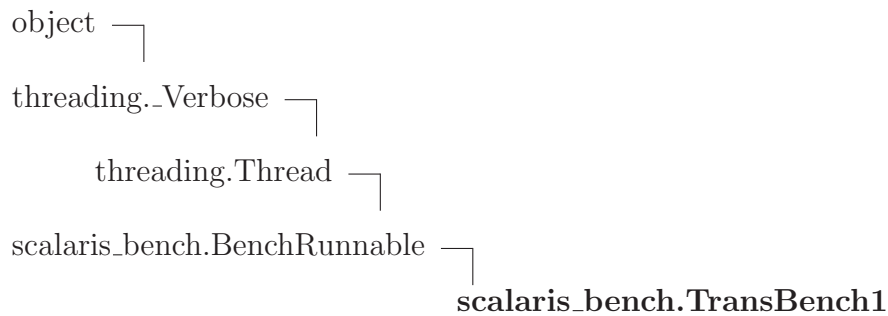
Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

2.7.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.8 Class TransBench1



Performs a benchmark writing objects using a new Transaction for each test.

2.8.1 Methods

`__init__(self, key, value, operations)`
 Create a new runnable.
 Overrides: `object.__init__` `exitit`(inherited documentation)

operation(*self*, *j*)

The operation to execute during the benchmark.

Overrides: scalaris_bench.BenchRunnable.operation extit(inherited documentation)

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

cleanup(), getSpeed(), init(), pre_init(), run(), shouldStop()

Inherited from threading.Thread

__repr__(), getName(), isAlive(), isDaemon(), is_alive(), join(), setDaemon(), setName(), start()

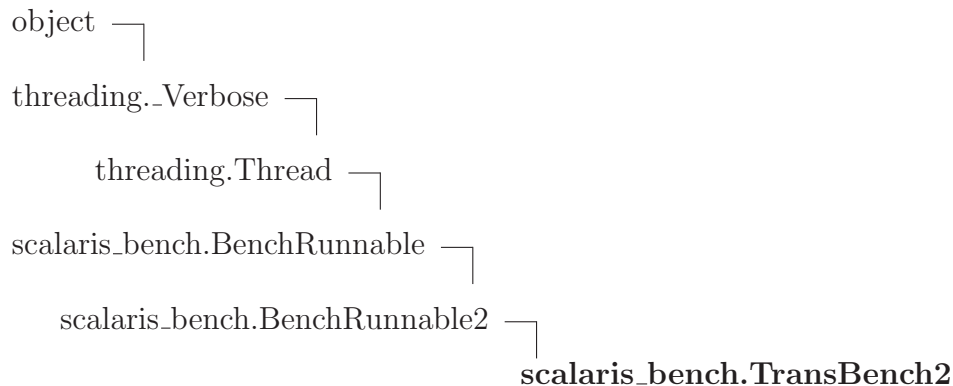
Inherited from object

__delattr__(), __format__(), __getattr__(), __hash__(), __new__(), __reduce__(), __reduce_ex__(), __setattr__(), __sizeof__(), __str__(), __subclasshook__()

2.8.2 Properties

Name	Description
<i>Inherited from threading.Thread</i>	
daemon, ident, name	
<i>Inherited from object</i>	
__class__	

2.9 Class TransBench2



Performs a benchmark writing objects using a new Transaction but re-using a single connection for each test.

2.9.1 Methods

`__init__`(*self*, *key*, *value*, *operations*)

Create a new runnable.

Overrides: `object.__init__` `exitit`(inherited documentation)

`operation`(*self*, *j*)

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` `exitit`(inherited documentation)

Inherited from `scalaris_bench.BenchRunnable2`(Section 2.4)

`cleanup()`, `init()`

Inherited from `scalaris_bench.BenchRunnable`(Section 2.3)

`getSpeed()`, `pre_init()`, `run()`, `shouldStop()`

Inherited from `threading.Thread`

`__repr__()`, `getName()`, `isAlive()`, `isDaemon()`, `is_alive()`, `join()`, `setDaemon()`, `setName()`, `start()`

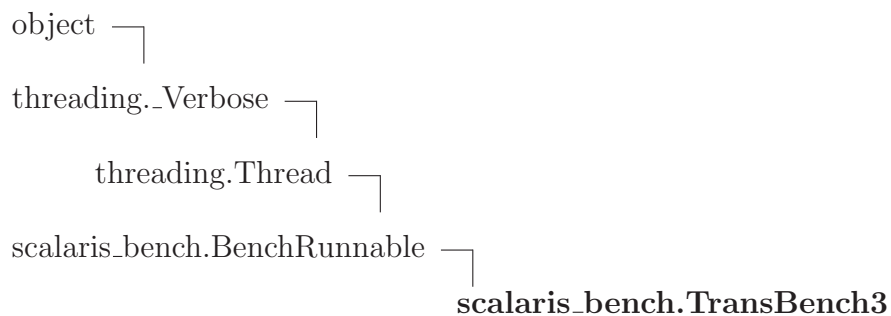
Inherited from `object`

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

2.9.2 Properties

Name	Description
<i>Inherited from <code>threading.Thread</code></i>	
<code>daemon</code> , <code>ident</code> , <code>name</code>	
<i>Inherited from <code>object</code></i>	
<code>__class__</code>	

2.10 Class TransBench3



Performs a benchmark writing objects using a single Transaction object for all tests.

2.10.1 Methods

__init__(*self*, *key*, *value*, *operations*)

Create a new runnable.

Overrides: object.__init__ extit(inherited documentation)

init(*self*)

Will be called at the start of the benchmark.

Overrides: scalaris_bench.BenchRunnable.init extit(inherited documentation)

cleanup(*self*)

Will be called before the end of the benchmark.

Overrides: scalaris_bench.BenchRunnable.cleanup extit(inherited documentation)

operation(*self*, *j*)

The operation to execute during the benchmark.

Overrides: scalaris_bench.BenchRunnable.operation extit(inherited documentation)

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

getSpeed(), pre_init(), run(), shouldStop()

Inherited from threading.Thread

`__repr__()`, `getName()`, `isAlive()`, `isDaemon()`, `is_alive()`, `join()`, `setDaemon()`, `setName()`, `start()`

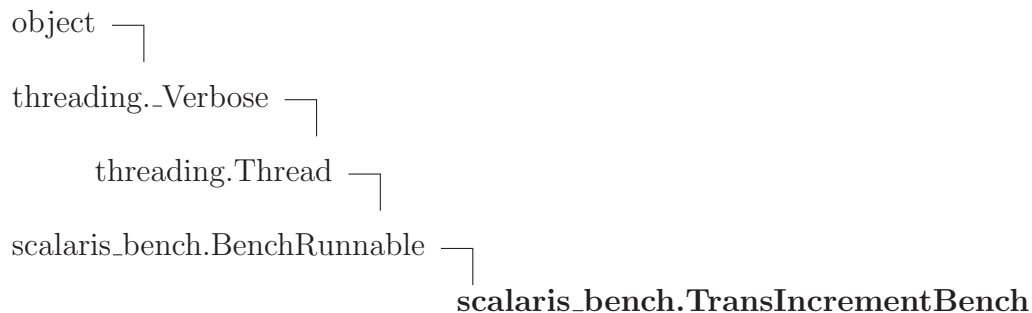
Inherited from object

`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`, `__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

2.10.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.11 Class *TransIncrementBench*



Known Subclasses: `scalaris_bench.TransIncrementBench1`, `scalaris_bench.TransIncrementBench2`, `scalaris_bench.TransIncrementBench3`

Performs a benchmark writing integer numbers on a single key and increasing them. Provides convenience methods for the full increment benchmark implementations.

2.11.1 Methods

__init__(*self*, *key*, *value*, *operations*)
 Create a new runnable.
 Overrides: `object.__init__` `exitit`(inherited documentation)

```
pre_init(self, j=None)
```

Will be called before the benchmark starts with all possible variations of "j" in the operation() call. "j" with None is the overall initialisation run at first.

Overrides: *scalaris_bench.BenchRunnable.pre_init* *exitit*(inherited documentation)

```
operation2(self, tx, j)
```

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

cleanup(), *getSpeed()*, *init()*, *operation()*, *run()*, *shouldStop()*

Inherited from threading.Thread

__repr__(), *getName()*, *isAlive()*, *isDaemon()*, *is_alive()*, *join()*, *setDaemon()*, *setName()*, *start()*

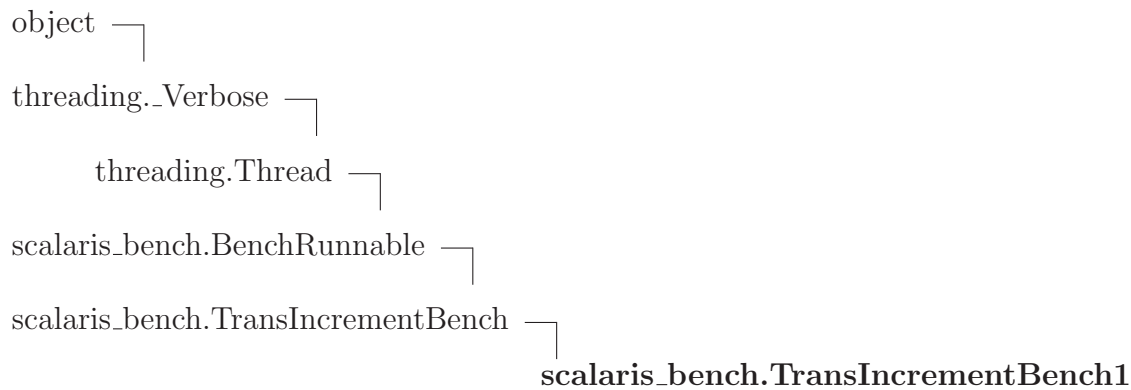
Inherited from object

__delattr__(), *__format__()*, *__getattr__()*, *__hash__()*, *__new__()*, *__reduce__()*, *__reduce_ex__()*, *__setattr__()*, *__sizeof__()*, *__str__()*, *__subclasshook__()*

2.11.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.12 Class *TransIncrementBench1*



Performs a benchmark writing integer numbers on a single key and increasing them using a new Transaction for each test.

2.12.1 Methods

`--init--(self, key, value, operations)`

Create a new runnable.

Overrides: `object.__init__` `exitit`(inherited documentation)

`operation(self, j)`

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` `exitit`(inherited documentation)

Inherited from `scalaris_bench.TransIncrementBench`(Section 2.11)

`operation2()`, `pre_init()`

Inherited from `scalaris_bench.BenchRunnable`(Section 2.3)

`cleanup()`, `getSpeed()`, `init()`, `run()`, `shouldStop()`

Inherited from `threading.Thread`

`--repr--()`, `getName()`, `isAlive()`, `isDaemon()`, `is_alive()`, `join()`, `setDaemon()`, `setName()`, `start()`

Inherited from `object`

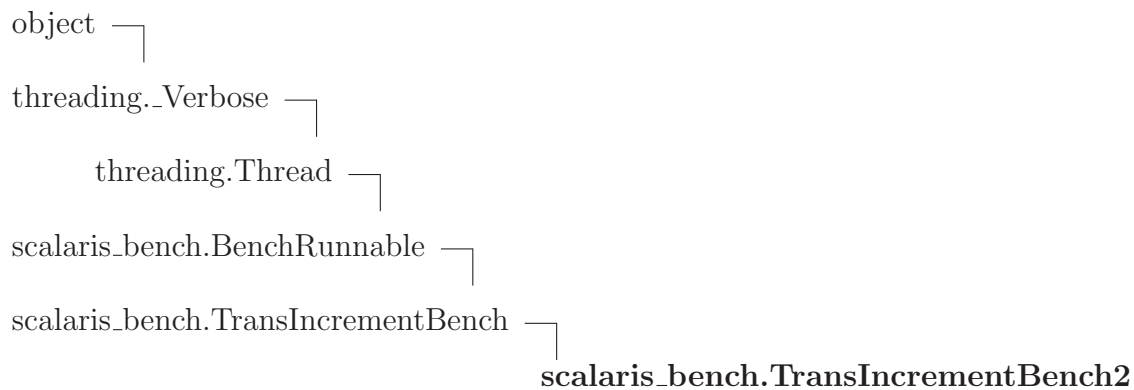
`--delattr--()`, `--format--()`, `--getattrattribute--()`, `--hash--()`, `--new--()`, `--reduce--()`, `--reduce-ex--()`,

`__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

2.12.2 Properties

Name	Description
<i>Inherited from <code>threading.Thread</code></i>	
<code>daemon</code> , <code>ident</code> , <code>name</code>	
<i>Inherited from object</i>	
<code>__class__</code>	

2.13 Class TransIncrementBench2



Performs a benchmark writing integer numbers on a single key and increasing them using a new Transaction but re-using a single connection for each test.

2.13.1 Methods

`__init__`(*self*, *key*, *value*, *operations*)

Create a new runnable.

Overrides: `object.__init__` extit(inherited documentation)

`init`(*self*)

Will be called at the start of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.init` extit(inherited documentation)

cleanup(*self*)

Will be called before the end of the benchmark.

Overrides: *scalaris_bench.BenchRunnable.cleanup* *exitit*(inherited documentation)

operation(*self*, *j*)

The operation to execute during the benchmark.

Overrides: *scalaris_bench.BenchRunnable.operation* *exitit*(inherited documentation)

Inherited from scalaris_bench.TransIncrementBench(Section 2.11)

operation2(), *pre_init*()

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

getSpeed(), *run*(), *shouldStop*()

Inherited from threading.Thread

__repr__(), *getName*(), *isAlive*(), *isDaemon*(), *is_alive*(), *join*(), *setDaemon*(), *setName*(), *start*()

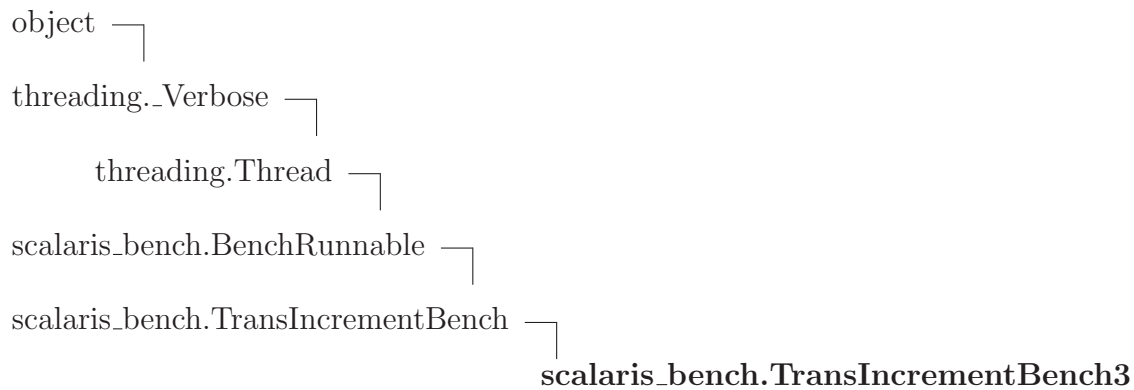
Inherited from object

__delattr__(), *__format__*(), *__getattr__*(), *__hash__*(), *__new__*(), *__reduce__*(), *__reduce_ex__*(), *__setattr__*(), *__sizeof__*(), *__str__*(), *__subclasshook__*()

2.13.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.14 Class **TransIncrementBench3**



Performs a benchmark writing objects using a single Transaction object for all tests.

2.14.1 Methods

`__init__(self, key, value, operations)`

Create a new runnable.

Overrides: `object.__init__` `exitit`(inherited documentation)

`init(self)`

Will be called at the start of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.init` `exitit`(inherited documentation)

`cleanup(self)`

Will be called before the end of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.cleanup` `exitit`(inherited documentation)

`operation(self, j)`

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` `exitit`(inherited documentation)

Inherited from `scalaris_bench.TransIncrementBench`(Section 2.11)

`operation2()`, `pre_init()`

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

getSpeed(), run(), shouldStop()

Inherited from threading.Thread

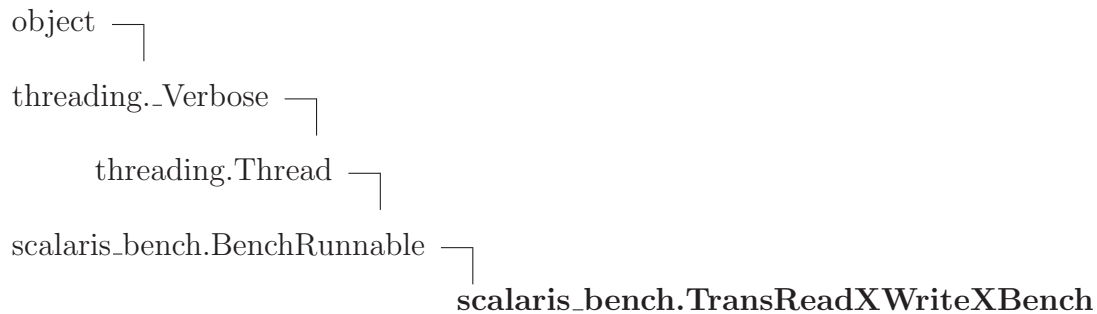
__repr__(), getName(), isAlive(), isDaemon(), is_alive(), join(), setDaemon(), setName(), start()

Inherited from object

__delattr__(), __format__(), __getattr__(), __hash__(), __new__(), __reduce__(), __reduce_ex__(), __setattr__(), __sizeof__(), __str__(), __subclasshook__()

2.14.2 Properties

Name	Description
<i>Inherited from threading.Thread</i>	
daemon, ident, name	
<i>Inherited from object</i>	
__class__	

2.15 Class TransReadXWriteXBench

Known Subclasses: scalaris_bench.TransRead5Write5Bench1, scalaris_bench.TransRead5Write5Bench2, scalaris_bench.TransRead5Write5Bench3

Performs a benchmark reading X values and overwriting them afterwards inside a transaction. Provides convenience methods for the full read-x, write-x benchmark implementations.

2.15.1 Methods

__init__(*self*, *key*, *value*, *nr_keys*, *operations*)

Create a new runnable.

Overrides: object.__init__ exitit(inherited documentation)

pre_init(*self*, *j*=None)

Will be called before the benchmark starts with all possible variations of "j" in the operation() call. "j" with None is the overall initialisation run at first.

Overrides: scalaris_bench.BenchRunnable.pre_init exitit(inherited documentation)

operation2(*self*, *tx*, *j*)

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

cleanup(), getSpeed(), init(), operation(), run(), shouldStop()

Inherited from threading.Thread

__repr__(), getName(), isAlive(), isDaemon(), is_alive(), join(), setDaemon(), setName(), start()

Inherited from object

__delattr__(), __format__(), __getattr__(), __hash__(), __new__(), __reduce__(), __reduce_ex__(), __setattr__(), __sizeof__(), __str__(), __subclasshook__()

2.15.2 Properties

Name	Description
<i>Inherited from threading.Thread</i>	
daemon, ident, name	
<i>Inherited from object</i>	
__class__	

2.16 Class `TransRead5Write5Bench1`



Performs a benchmark reading 5 values and overwriting them afterwards inside a transaction using a new Transaction for each test.

2.16.1 Methods

`--init--`(*self*, *key*, *value*, *operations*)

Create a new runnable.

Overrides: `object.__init__` `exitit`(inherited documentation)

`operation`(*self*, *j*)

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` `exitit`(inherited documentation)

Inherited from `scalaris_bench.TransReadXWriteXBench`(Section 2.15)

`operation2()`, `pre_init()`

Inherited from `scalaris_bench.BenchRunnable`(Section 2.3)

`cleanup()`, `getSpeed()`, `init()`, `run()`, `shouldStop()`

Inherited from `threading.Thread`

`--repr--()`, `getName()`, `isAlive()`, `isDaemon()`, `is_alive()`, `join()`, `setDaemon()`, `setName()`, `start()`

Inherited from `object`

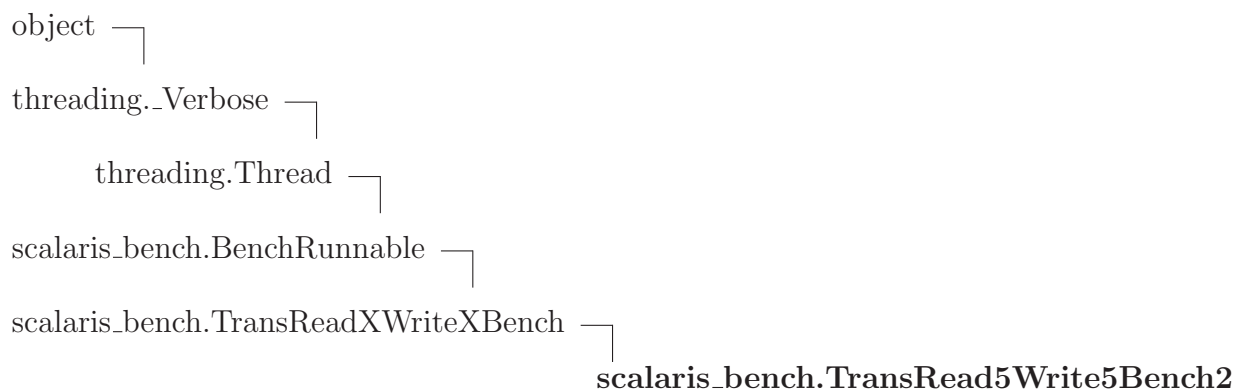
`--delattr--()`, `--format--()`, `--getattr__()`, `--hash--()`, `--new--()`, `--reduce--()`, `--reduce-ex--()`,

`__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

2.16.2 Properties

Name	Description
<i>Inherited from <code>threading.Thread</code></i>	
<code>daemon</code> , <code>ident</code> , <code>name</code>	
<i>Inherited from object</i>	
<code>__class__</code>	

2.17 Class *TransRead5Write5Bench2*



Performs a benchmark reading 5 values and overwriting them afterwards inside a transaction using a new Transaction but re-using a single connection for each test.

2.17.1 Methods

`__init__`(*self*, *key*, *value*, *operations*)

Create a new runnable.

Overrides: `object.__init__` extit(inherited documentation)

`init`(*self*)

Will be called at the start of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.init` extit(inherited documentation)

cleanup(*self*)

Will be called before the end of the benchmark.

Overrides: *scalaris_bench.BenchRunnable.cleanup* *exitit*(inherited documentation)

operation(*self*, *j*)

The operation to execute during the benchmark.

Overrides: *scalaris_bench.BenchRunnable.operation* *exitit*(inherited documentation)

Inherited from scalaris_bench.TransReadXWriteXBench(Section 2.15)

operation2(), *pre_init*()

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

getSpeed(), *run*(), *shouldStop*()

Inherited from threading.Thread

__repr__(), *getName*(), *isAlive*(), *isDaemon*(), *is_alive*(), *join*(), *setDaemon*(), *setName*(), *start*()

Inherited from object

__delattr__(), *__format__*(), *__getattr__*(), *__hash__*(), *__new__*(), *__reduce__*(), *__reduce_ex__*(), *__setattr__*(), *__sizeof__*(), *__str__*(), *__subclasshook__*()

2.17.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.18 Class *TransRead5Write5Bench3*



Performs a benchmark reading 5 values and overwriting them afterwards inside a transaction using a single Transaction object for all tests.

2.18.1 Methods

`__init__`(*self*, *key*, *value*, *operations*)

Create a new runnable.

Overrides: `object.__init__` `exitit`(inherited documentation)

`init`(*self*)

Will be called at the start of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.init` `exitit`(inherited documentation)

`cleanup`(*self*)

Will be called before the end of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.cleanup` `exitit`(inherited documentation)

`operation`(*self*, *j*)

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` `exitit`(inherited documentation)

Inherited from `scalaris_bench.TransReadXWriteXBench`(Section 2.15)

operation2(), pre_init()

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

getSpeed(), run(), shouldStop()

Inherited from threading.Thread

__repr__(), getName(), isAlive(), isDaemon(), is_alive(), join(), setDaemon(), setName(), start()

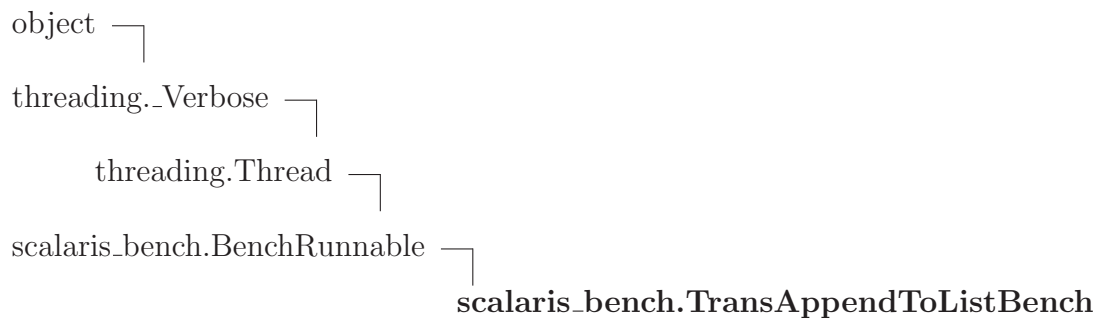
Inherited from object

__delattr__(), __format__(), __getattr__(), __hash__(), __new__(), __reduce__(), __reduce_ex__(), __setattr__(), __sizeof__(), __str__(), __subclasshook__()

2.18.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.19 Class TransAppendToListBench



Known Subclasses: scalaris_bench.TransAppendToListBench1, scalaris_bench.TransAppendToListBench2, scalaris_bench.TransAppendToListBench3

Performs a benchmark adding values to a list inside a transaction. Provides convenience methods for the full append-to-list benchmark implementations.

2.19.1 Methods

__init__(*self*, *key*, *value*, *nr_keys*, *operations*)

Create a new runnable.

Overrides: object.__init__ exitit(inherited documentation)

pre_init(*self*, *j*=None)

Will be called before the benchmark starts with all possible variations of "j" in the operation() call. "j" with None is the overall initialisation run at first.

Overrides: scalaris_bench.BenchRunnable.pre_init exitit(inherited documentation)

operation2(*self*, *tx*, *j*)

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

cleanup(), getSpeed(), init(), operation(), run(), shouldStop()

Inherited from threading.Thread

__repr__(), getName(), isAlive(), isDaemon(), is_alive(), join(), setDaemon(), setName(), start()

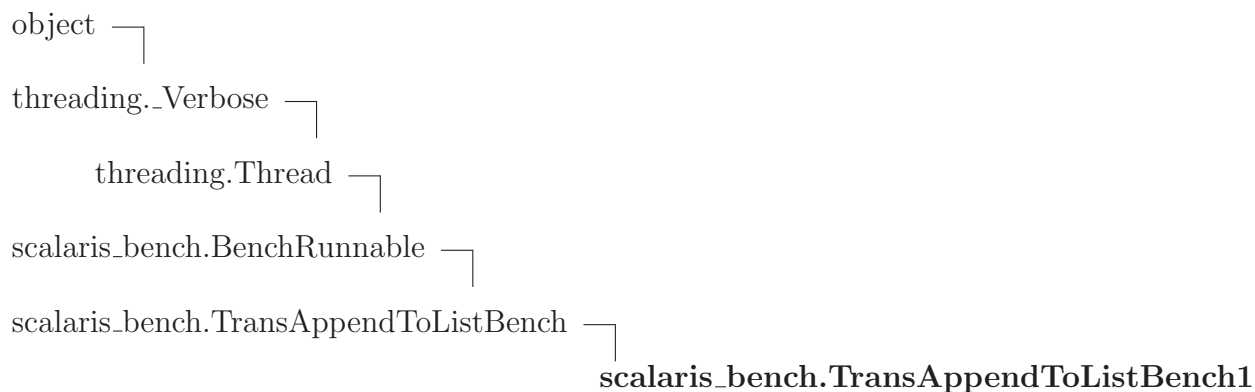
Inherited from object

__delattr__(), __format__(), __getattr__(), __hash__(), __new__(), __reduce__(), __reduce_ex__(), __setattr__(), __sizeof__(), __str__(), __subclasshook__()

2.19.2 Properties

Name	Description
<i>Inherited from threading.Thread</i>	
daemon, ident, name	
<i>Inherited from object</i>	
__class__	

2.20 Class TransAppendToListBench1



Performs a benchmark adding values to a list inside a transaction using a new Transaction for each test.

2.20.1 Methods

`__init__(self, key, value, operations)`

Create a new runnable.

Overrides: `object.__init__` extit(inherited documentation)

`operation(self, j)`

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` extit(inherited documentation)

Inherited from `scalaris_bench.TransAppendToListBench`(Section 2.19)

`operation2()`, `pre_init()`

Inherited from `scalaris_bench.BenchRunnable`(Section 2.3)

`cleanup()`, `getSpeed()`, `init()`, `run()`, `shouldStop()`

Inherited from `threading.Thread`

`__repr__()`, `getName()`, `isAlive()`, `isDaemon()`, `is_alive()`, `join()`, `setDaemon()`, `setName()`, `start()`

Inherited from `object`

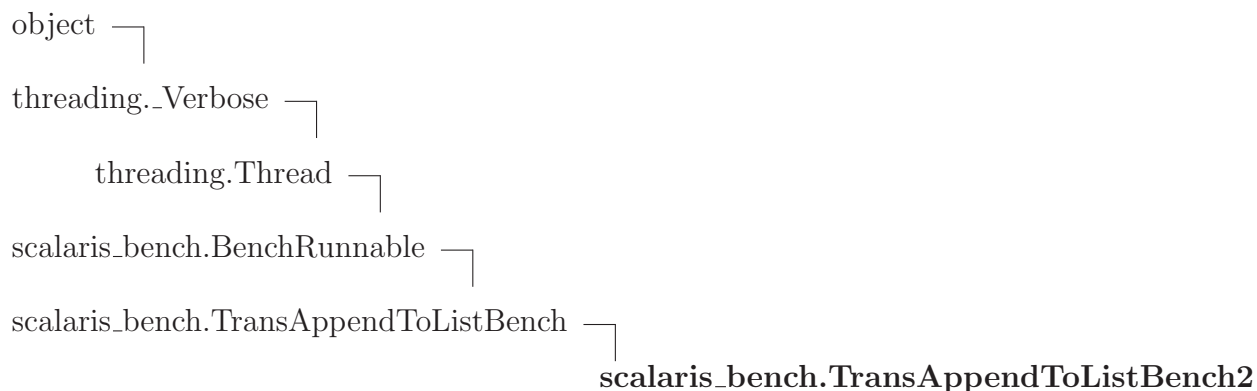
`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`,

`__setattr__()`, `__sizeof__()`, `__str__()`, `__subclasshook__()`

2.20.2 Properties

Name	Description
<i>Inherited from <code>threading.Thread</code></i>	
<code>daemon</code> , <code>ident</code> , <code>name</code>	
<i>Inherited from <code>object</code></i>	
<code>__class__</code>	

2.21 Class TransAppendToListBench2



Performs a benchmark adding values to a list inside a transaction using a new Transaction but re-using a single connection for each test.

2.21.1 Methods

`__init__`(*self*, *key*, *value*, *operations*)

Create a new runnable.

Overrides: `object.__init__` `exitit`(inherited documentation)

`init`(*self*)

Will be called at the start of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.init` `exitit`(inherited documentation)

cleanup(*self*)

Will be called before the end of the benchmark.

Overrides: *scalaris_bench.BenchRunnable.cleanup* *exitit*(inherited documentation)

operation(*self, j*)

The operation to execute during the benchmark.

Overrides: *scalaris_bench.BenchRunnable.operation* *exitit*(inherited documentation)

Inherited from scalaris_bench.TransAppendToListBench(Section 2.19)

operation2(), *pre_init*()

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

getSpeed(), *run*(), *shouldStop*()

Inherited from threading.Thread

__repr__(), *getName*(), *isAlive*(), *isDaemon*(), *is_alive*(), *join*(), *setDaemon*(), *setName*(), *start*()

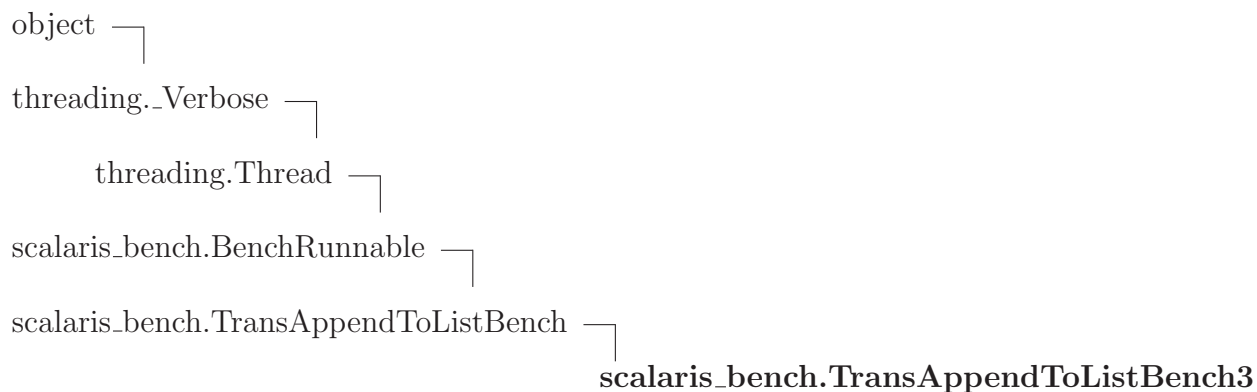
Inherited from object

__delattr__(), *__format__*(), *__getattr__*(), *__hash__*(), *__new__*(), *__reduce__*(), *__reduce_ex__*(), *__setattr__*(), *__sizeof__*(), *__str__*(), *__subclasshook__*()

2.21.2 Properties

Name	Description
<i>Inherited from threading.Thread</i> daemon, ident, name	
<i>Inherited from object</i> __class__	

2.22 Class **TransAppendToListBench3**



Performs a benchmark adding values to a list inside a transaction using a single Transaction object for all tests.

2.22.1 Methods

`__init__(self, key, value, operations)`

Create a new runnable.

Overrides: `object.__init__` extit(inherited documentation)

`init(self)`

Will be called at the start of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.init` extit(inherited documentation)

`cleanup(self)`

Will be called before the end of the benchmark.

Overrides: `scalaris_bench.BenchRunnable.cleanup` extit(inherited documentation)

`operation(self, j)`

The operation to execute during the benchmark.

Overrides: `scalaris_bench.BenchRunnable.operation` extit(inherited documentation)

Inherited from `scalaris_bench.TransAppendToListBench` (Section 2.19)

operation2(), pre_init()

Inherited from scalaris_bench.BenchRunnable(Section 2.3)

getSpeed(), run(), shouldStop()

Inherited from threading.Thread

__repr__(), getName(), isAlive(), isDaemon(), is_alive(), join(), setDaemon(), setName(), start()

Inherited from object

__delattr__(), __format__(), __getattr__(), __hash__(), __new__(), __reduce__(), __reduce_ex__(), __setattr__(), __sizeof__(), __str__(), __subclasshook__()

2.22.2 Properties

Name	Description
<i>Inherited from threading.Thread</i>	
daemon, ident, name	
<i>Inherited from object</i>	
__class__	

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