

Scalaris Python API

API Documentation

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Contents

Contents	1
1 Module scalaris	2
1.1 Functions	2
1.2 Variables	2
1.3 Class JSONConnection	2
1.3.1 Methods	2
1.3.2 Properties	5
1.4 Class ScalarisError	5
1.4.1 Methods	6
1.4.2 Properties	6
1.5 Class AbortError	6
1.5.1 Methods	7
1.5.2 Properties	7
1.6 Class ConnectionError	8
1.6.1 Methods	8
1.6.2 Properties	8
1.7 Class KeyChangedError	9
1.7.1 Methods	9
1.7.2 Properties	10
1.8 Class NodeNotFoundError	10
1.8.1 Methods	10
1.8.2 Properties	11
1.9 Class NotFoundError	11
1.9.1 Methods	11
1.9.2 Properties	12
1.10 Class NotAListError	12
1.10.1 Methods	12
1.10.2 Properties	13
1.11 Class NotANumberError	13
1.11.1 Methods	14
1.11.2 Properties	14
1.12 Class TimeoutError	15
1.12.1 Methods	15
1.12.2 Properties	15
1.13 Class ConfigError	16
1.13.1 Methods	16

1.13.2	Properties	17
1.14	Class LockError	17
1.14.1	Methods	17
1.14.2	Properties	18
1.15	Class UnknownError	18
1.15.1	Methods	18
1.15.2	Properties	19
1.16	Class DeleteResult	19
1.16.1	Methods	19
1.16.2	Properties	19
1.17	Class ConnectionPool	20
1.17.1	Methods	20
1.17.2	Properties	20
1.18	Class TransactionSingleOp	21
1.18.1	Methods	21
1.18.2	Properties	23
1.19	Class Transaction	23
1.19.1	Methods	23
1.19.2	Properties	25
1.20	Class ReplicatedDHT	26
1.20.1	Methods	26
1.20.2	Properties	27
1.21	Class RoutingTable	27
1.21.1	Methods	27
1.21.2	Properties	27
1.22	Class ScalarisVM	27
1.22.1	Methods	28
1.22.2	Properties	29
1.23	Class Autoscale	29
1.23.1	Methods	30
1.23.2	Properties	30
1.23.3	Class Variables	30
2	Module scalaris_bench	32
2.1	Functions	32
2.2	Variables	32
2.3	Class BenchRunnable	32
2.3.1	Methods	33
2.3.2	Properties	33
2.4	Class BenchRunnable2	34
2.4.1	Methods	34
2.4.2	Properties	35
2.5	Class TransSingleOpBench1	35
2.5.1	Methods	35
2.5.2	Properties	36
2.6	Class TransSingleOpBench2	36
2.6.1	Methods	37
2.6.2	Properties	37
2.7	Class TransSingleOpBench3	38
2.7.1	Methods	38
2.7.2	Properties	39
2.8	Class TransBench1	39

2.8.1	Methods	39
2.8.2	Properties	40
2.9	Class TransBench2	40
2.9.1	Methods	41
2.9.2	Properties	41
2.10	Class TransBench3	42
2.10.1	Methods	42
2.10.2	Properties	43
2.11	Class TransIncrementBench	43
2.11.1	Methods	43
2.11.2	Properties	44
2.12	Class TransIncrementBench1	45
2.12.1	Methods	45
2.12.2	Properties	46
2.13	Class TransIncrementBench2	46
2.13.1	Methods	46
2.13.2	Properties	47
2.14	Class TransIncrementBench3	48
2.14.1	Methods	48
2.14.2	Properties	49
2.15	Class TransReadXWriteXBench	49
2.15.1	Methods	50
2.15.2	Properties	50
2.16	Class TransRead5Write5Bench1	51
2.16.1	Methods	51
2.16.2	Properties	52
2.17	Class TransRead5Write5Bench2	52
2.17.1	Methods	52
2.17.2	Properties	53
2.18	Class TransRead5Write5Bench3	54
2.18.1	Methods	54
2.18.2	Properties	55
2.19	Class TransAppendToListBench	55
2.19.1	Methods	56
2.19.2	Properties	56
2.20	Class TransAppendToListBench1	57
2.20.1	Methods	57
2.20.2	Properties	58
2.21	Class TransAppendToListBench2	58
2.21.1	Methods	58
2.21.2	Properties	59
2.22	Class TransAppendToListBench3	60
2.22.1	Methods	60
2.22.2	Properties	61

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>

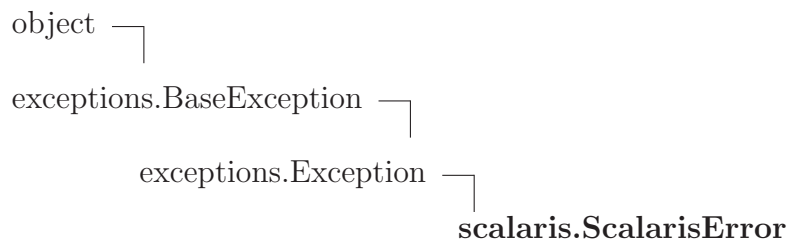
Inherited from object

`__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__()`

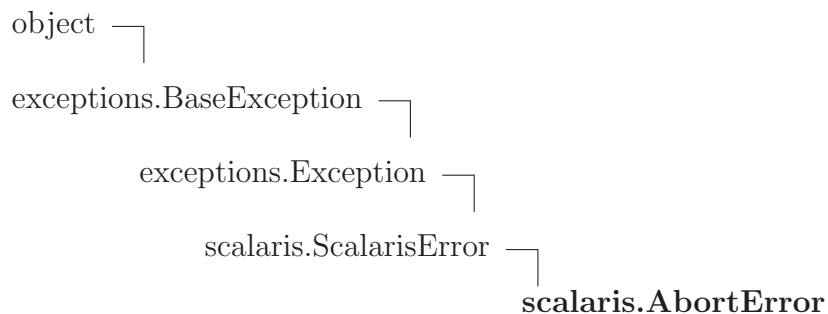
Inherited from `object`

`__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__()
```

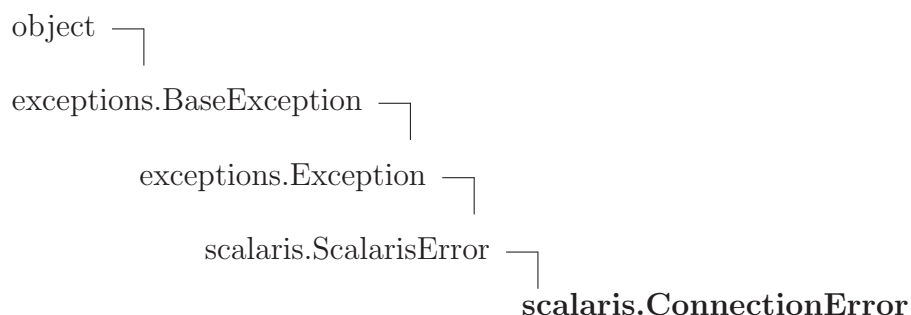
Inherited from object

```
__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__()
```

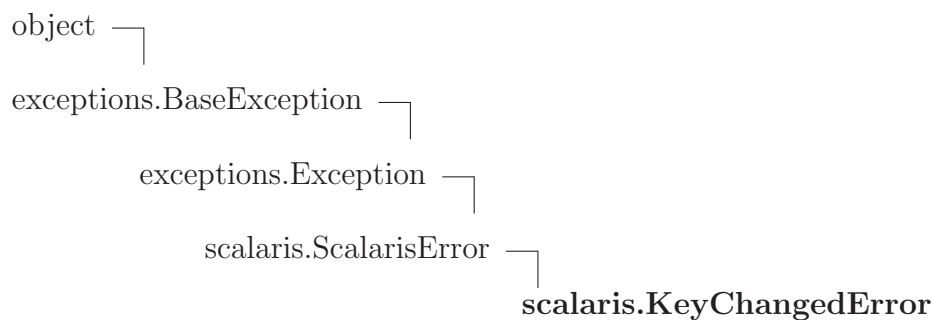
1.6.2 Properties

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__()
```

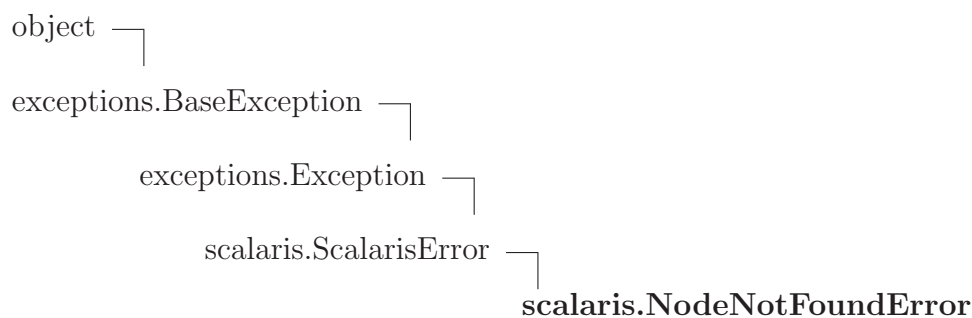
Inherited from `object`

```
__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__ 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__()

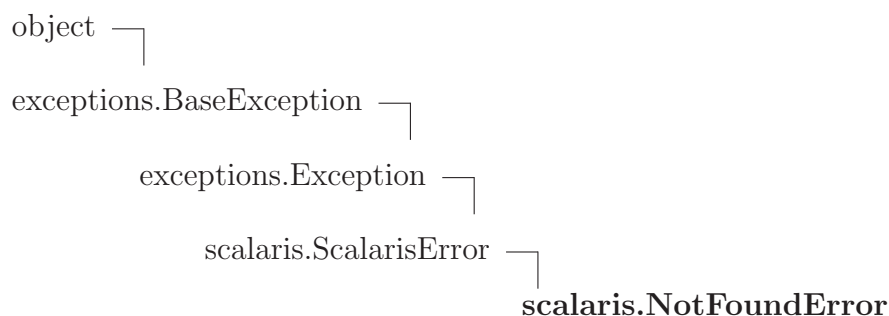
```

Inherited from object

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

1.8.2 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`

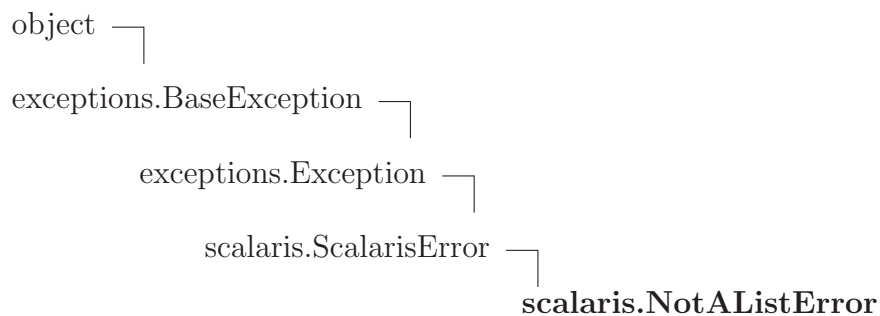
`__delattr__()`, `__getattr__()`, `__getitem__()`, `__getslice__()`, `__reduce__()`, `__repr__()`,
`__setattr__()`, `__setstate__()`, `__unicode__()`

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>exitit</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__()
```

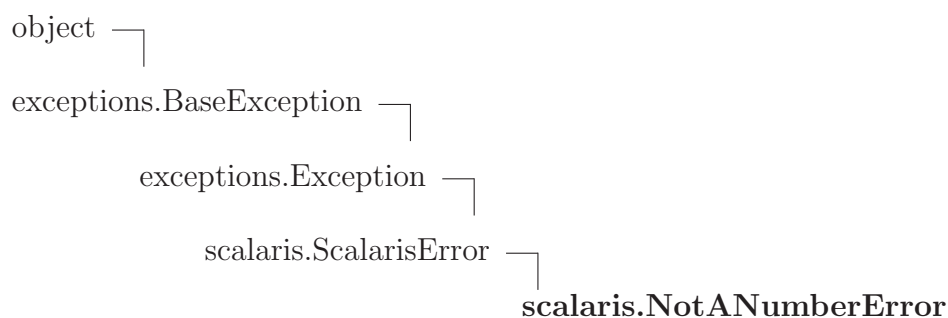
Inherited from object

```
__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__()
```

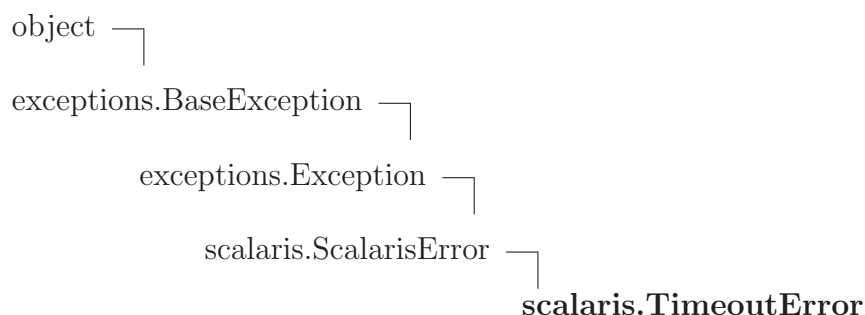
Inherited from object

```
__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__()
```

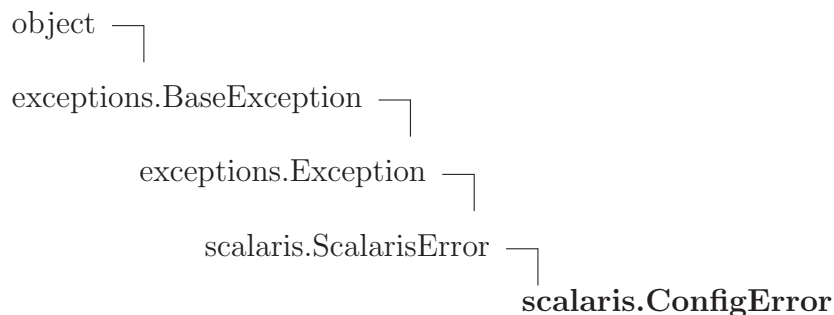
1.12.2 Properties

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__()
```

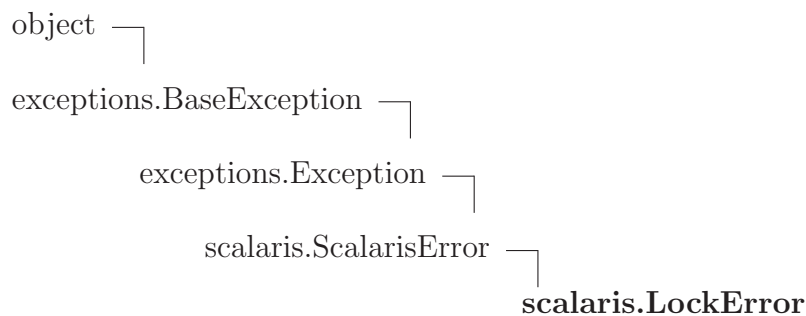
Inherited from object

```
__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__` `exitit`(inherited documentation)

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

Inherited from `exceptions.Exception`

`__new__()`

Inherited from `exceptions.BaseException`

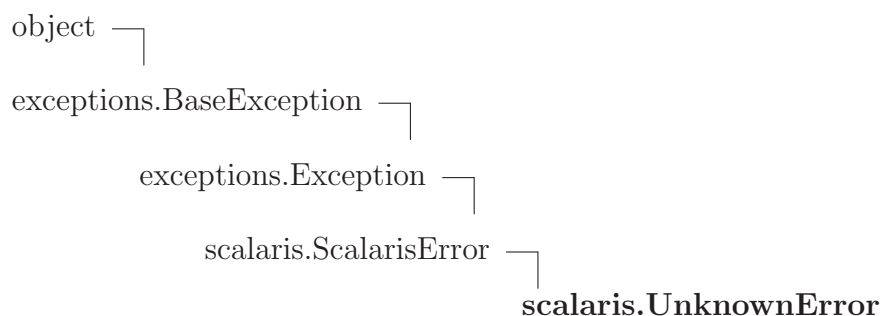
`__delattr__()`, `__getattr__()`, `__getitem__()`, `__getslice__()`, `__reduce__()`, `__repr__()`,
`__setattr__()`, `__setstate__()`, `__unicode__()`

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>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__()`

1.15.2 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*



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, `<tt>None</tt>` 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>	
<code>--class--</code>	

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(*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__()`

1.18.2 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__(*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. 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()`. 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*

object —
scalaris.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.

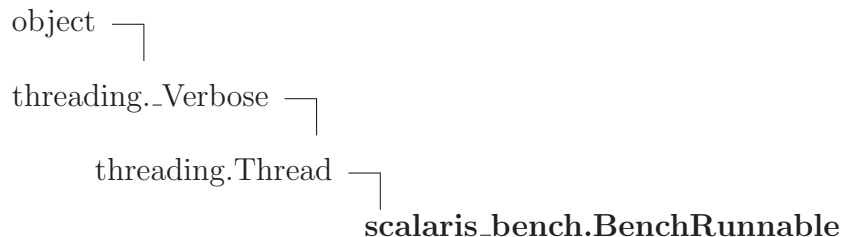
Tests some strategies for writing key/value pairs to scalaris: 1) writing binary objects (random data, size = `_BENCH_DATA_SIZE`) 2) writing string objects (random data, size = `_BENCH_DATA_SIZE`) each with the given number of consecutive operations and parallel threads per Scalaris node, * first using 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__()`

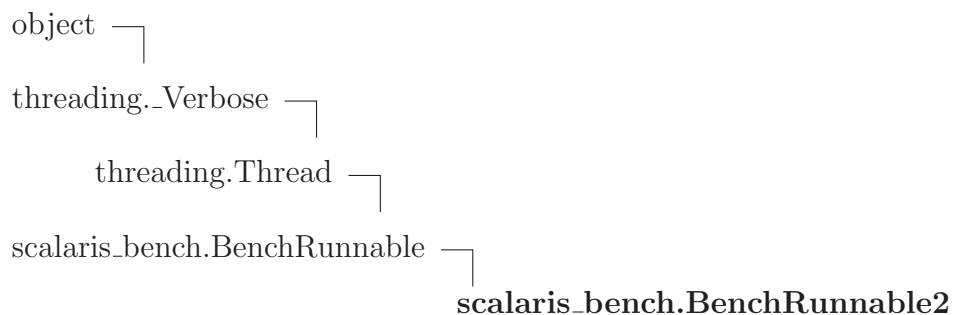
2.3.2 Properties

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

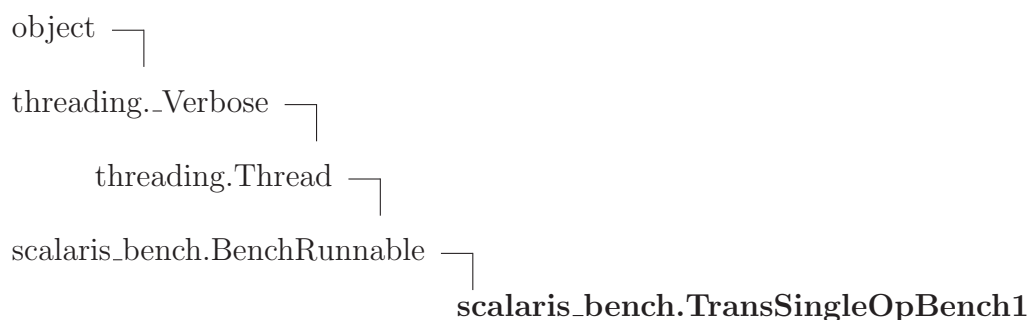
__repr__(), *getName()*, *isAlive()*, *isDaemon()*, *is_alive()*, *join()*, *setDaemon()*, *setName()*, *start()*

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

<code>__init__(self, key, value, operations)</code> Create a new runnable. Overrides: <code>object.__init__</code> extit(inherited documentation)
<code>operation(self, j)</code> The operation to execute during the benchmark. Overrides: <code>scalaris_bench.BenchRunnable.operation</code> 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()

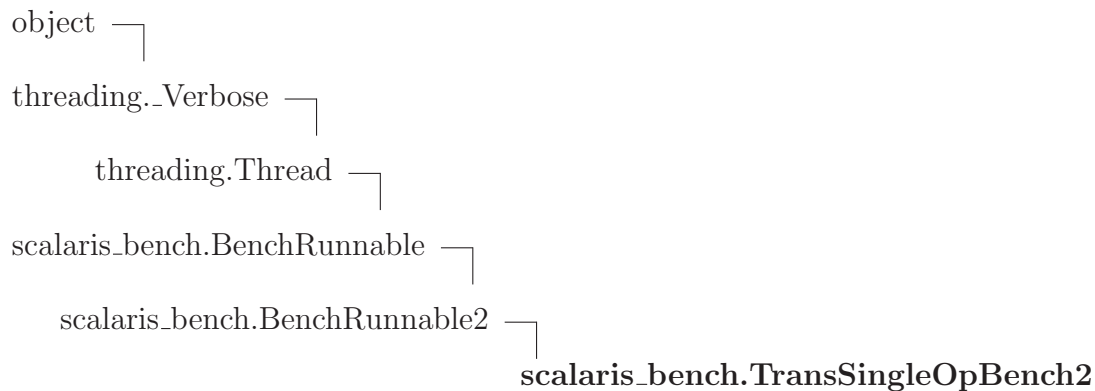
Inherited from object

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

2.5.2 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()`

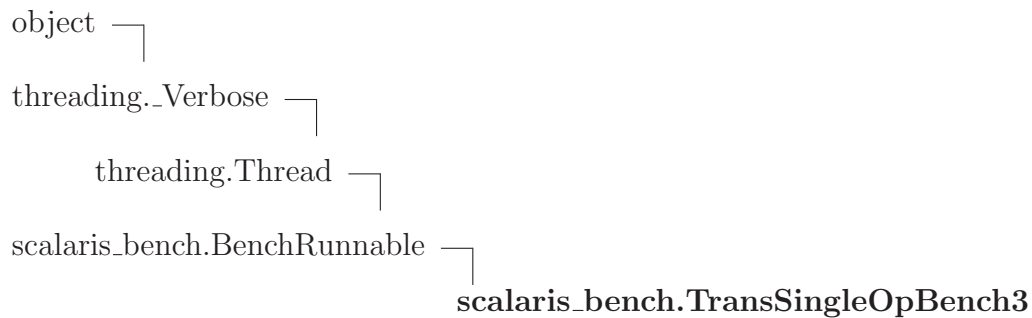
Inherited from `object`

`__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__` `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.BenchRunnable`(Section 2.3)

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

Inherited from `threading.Thread`

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

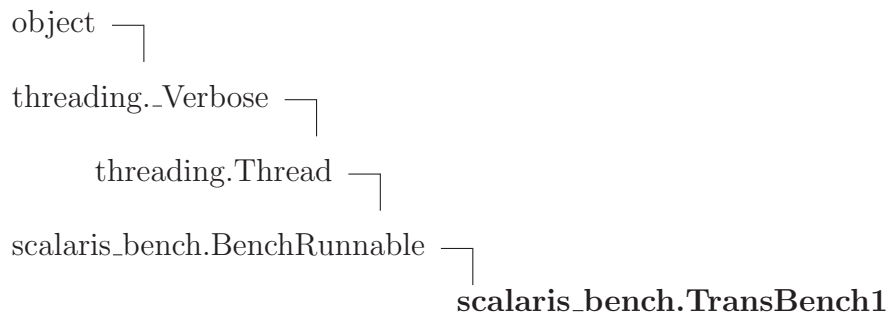
Inherited from object

`__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()

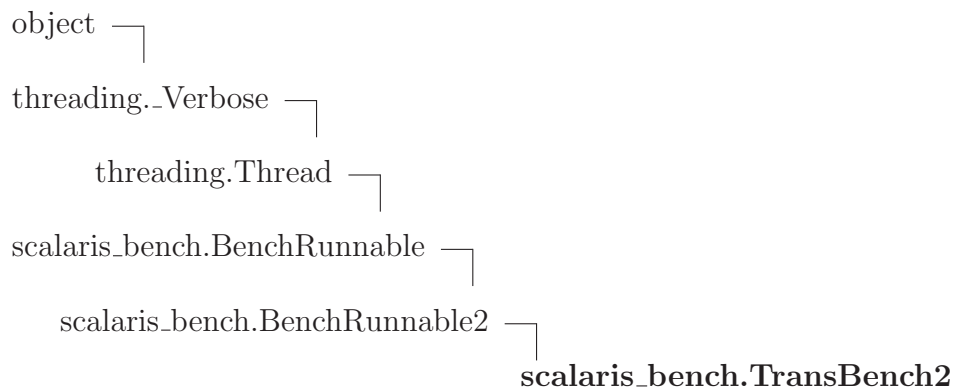
Inherited from object

__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()`

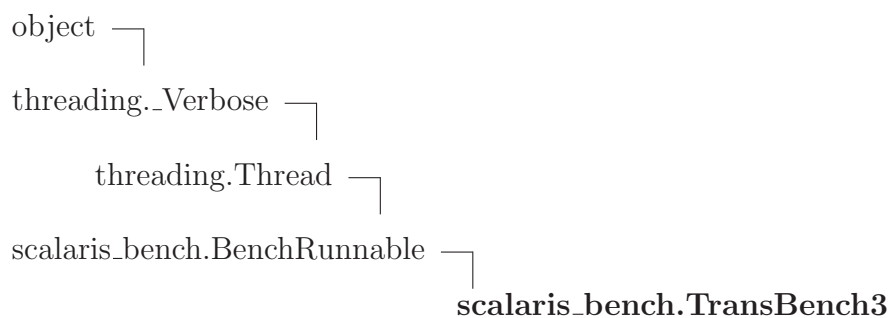
Inherited from `object`

`__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()`

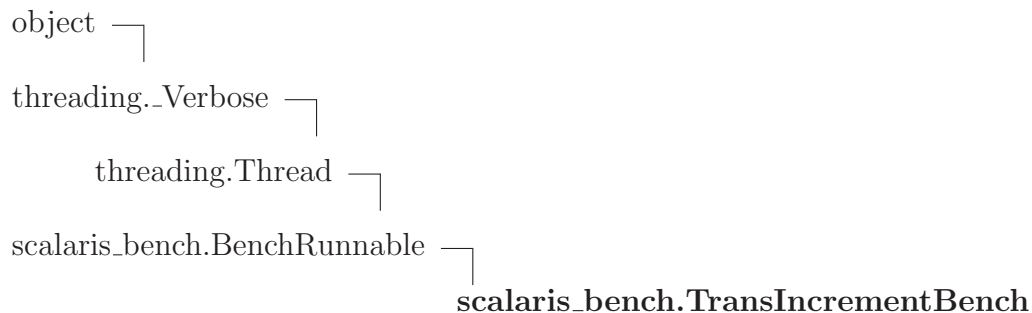
Inherited from object

`__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()*

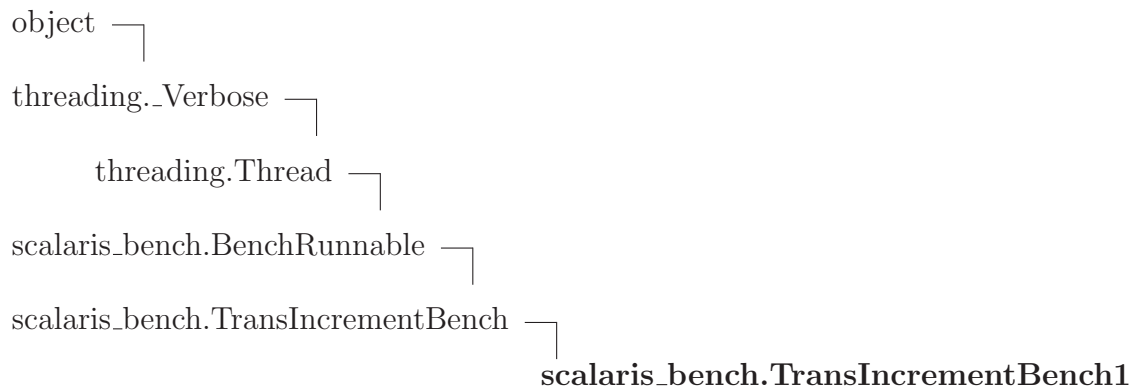
Inherited from object

__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`

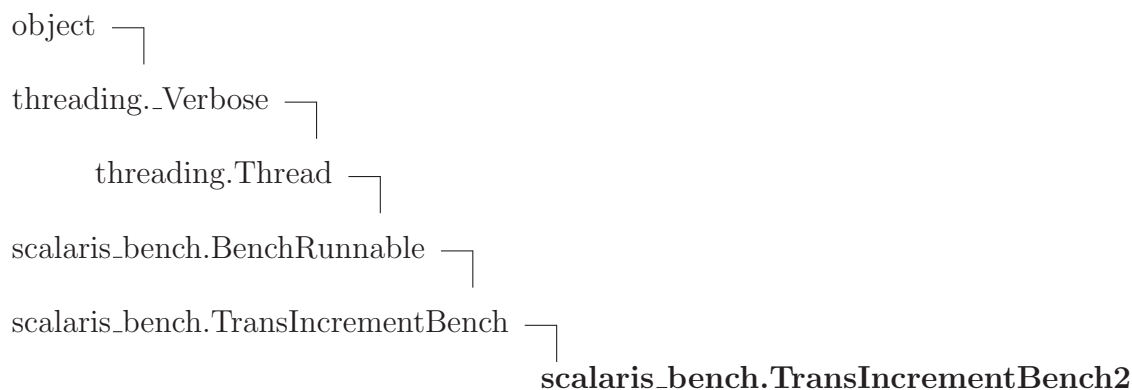
`--delattr--()`, `--format--()`, `--getattrattribute--()`, `--hash--()`, `--new--()`, `--reduce--()`, `--reduce-ex--()`,

`__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

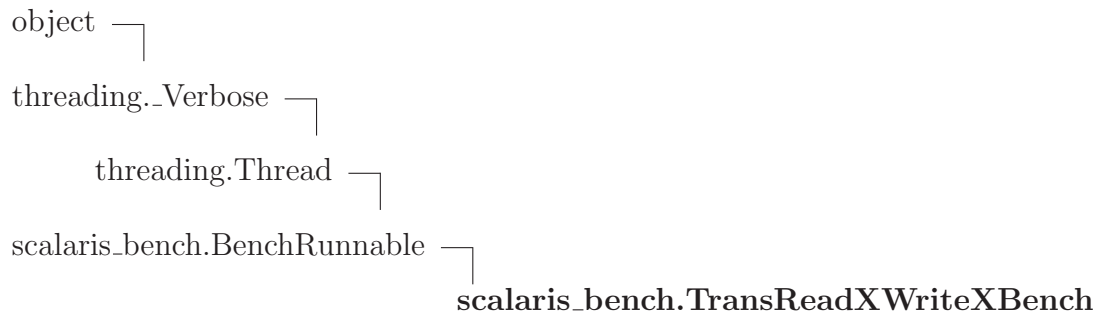
__repr__(), getName(), isAlive(), isDaemon(), is_alive(), join(), setDaemon(), setName(), start()

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()

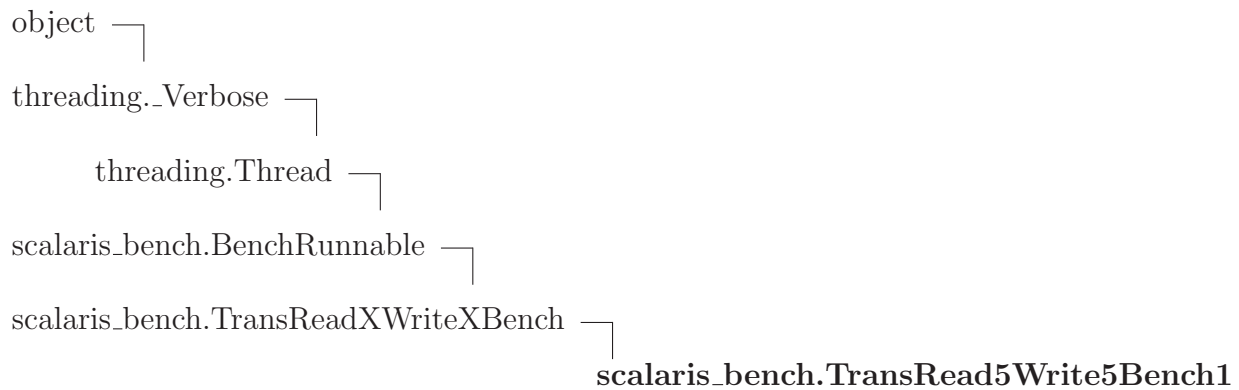
Inherited from object

__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--()`, `--getattrattribute--()`, `--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.

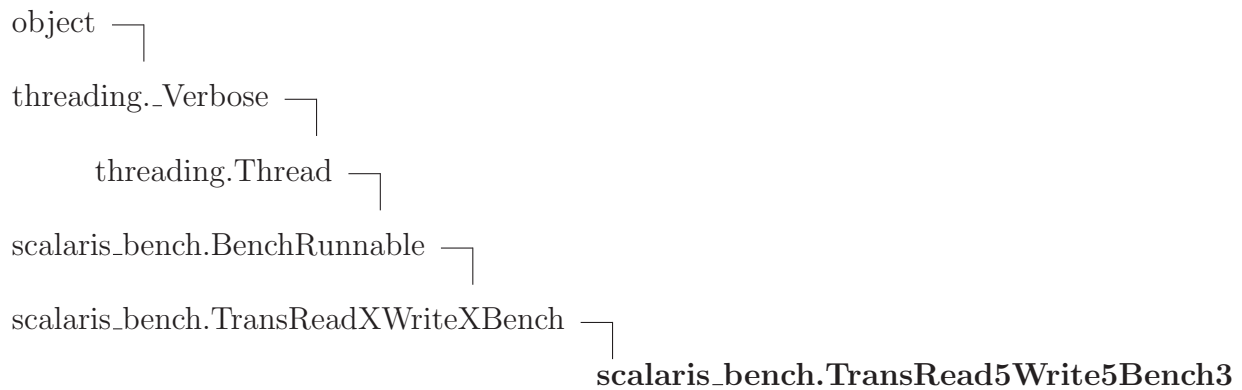
Overrides: *scalaris_bench.BenchRunnable.cleanup* *exitit*(inherited documentation)**operation**(*self*, *j*)

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__ 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.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()

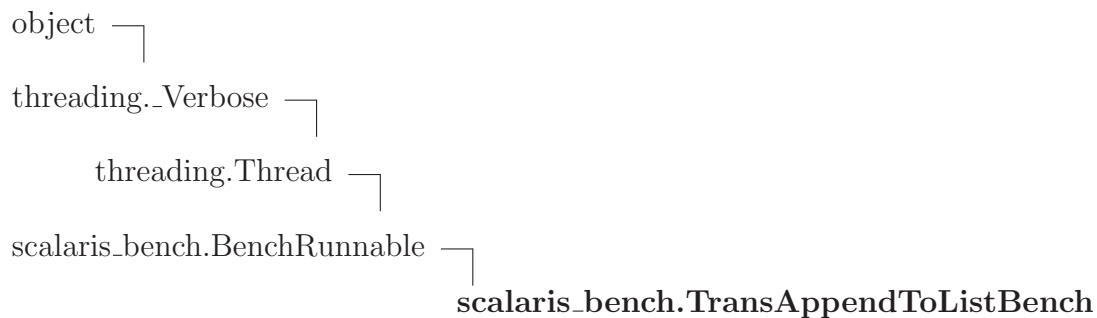
Inherited from object

__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__` `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)

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

Inherited from `threading.Thread`

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

Inherited from `object`

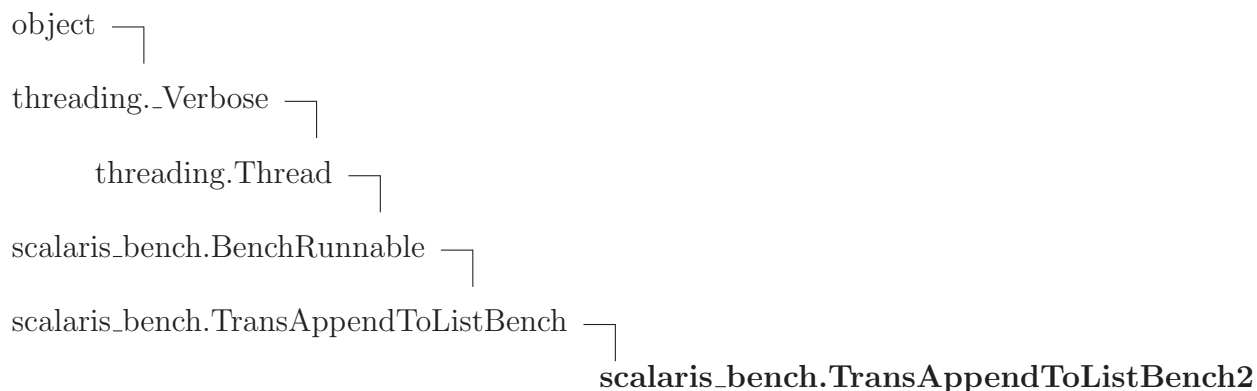
`__delattr__()`, `__format__()`, `__getattr__()`, `__hash__()`, `__new__()`, `__reduce__()`, `__reduce_ex__()`,

`__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*()

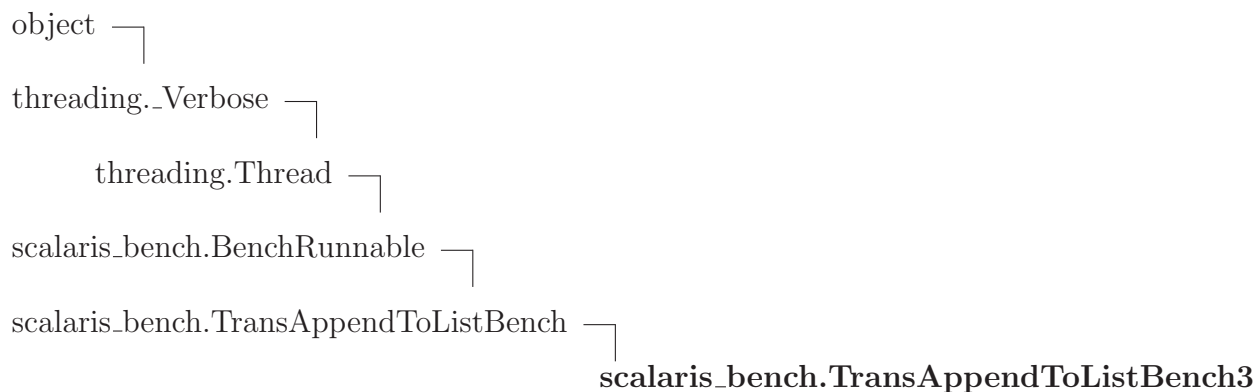
Inherited from object

__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__	

Index

- scalaris (*module*), 2–31
 - scalaris.AbortError (*class*), 6–7
 - scalaris.Autoscale (*class*), 29–31
 - scalaris.Autoscale.check_config (*method*), 30
 - scalaris.Autoscale.close_connection (*method*), 30
 - scalaris.Autoscale.lock_scale_req (*method*), 30
 - scalaris.Autoscale.process_result_check_config (*method*), 30
 - scalaris.Autoscale.process_result_lock_scale_req (*method*), 30
 - scalaris.Autoscale.process_result_pull_scale_req (*method*), 30
 - scalaris.Autoscale.process_result_unlock_scale_req (*method*), 30
 - scalaris.Autoscale.pull_scale_req (*method*), 30
 - scalaris.Autoscale.unlock_scale_req (*method*), 30
 - scalaris.ConfigError (*class*), 16–17
 - scalaris.ConnectionError (*class*), 7–9
 - scalaris.ConnectionPool (*class*), 19–20
 - scalaris.ConnectionPool.close_all (*method*), 20
 - scalaris.ConnectionPool.get_connection (*method*), 20
 - scalaris.ConnectionPool.release_connection (*method*), 20
 - scalaris.DeleteResult (*class*), 19
 - scalaris.JSONConnection (*class*), 2–5
 - scalaris.JSONConnection.call (*method*), 2
 - scalaris.JSONConnection.callp (*method*), 2
 - scalaris.JSONConnection.check_fail_abort (*static method*), 2
 - scalaris.JSONConnection.close (*method*), 5
 - scalaris.JSONConnection.create_delete_result (*static method*), 3
 - scalaris.JSONConnection.decode_value (*static method*), 2
 - scalaris.JSONConnection.encode_value (*static method*), 2
 - scalaris.JSONConnection.new_req_list_t (*static method*), 5
 - scalaris.JSONConnection.new_req_list_tso (*static method*), 5
 - scalaris.JSONConnection.process_result_add_del_on_li (*static method*), 3
 - scalaris.JSONConnection.process_result_add_on_nr (*static method*), 3
 - scalaris.JSONConnection.process_result_autoscale_che (*static method*), 4
 - scalaris.JSONConnection.process_result_autoscale_loc (*static method*), 5
 - scalaris.JSONConnection.process_result_autoscale_pu (*static method*), 4
 - scalaris.JSONConnection.process_result_autoscale_uni (*static method*), 5
 - scalaris.JSONConnection.process_result_commit (*static method*), 3
 - scalaris.JSONConnection.process_result_delete (*static method*), 3
 - scalaris.JSONConnection.process_result_nop (*static method*), 5
 - scalaris.JSONConnection.process_result_read (*static method*), 3
 - scalaris.JSONConnection.process_result_req_list_t (*static method*), 3
 - scalaris.JSONConnection.process_result_req_list_tso (*static method*), 3
 - scalaris.JSONConnection.process_result_test_and_set (*static method*), 3
 - scalaris.JSONConnection.process_result_vm_add_node (*static method*), 4
 - scalaris.JSONConnection.process_result_vm_delete_no (*static method*), 4
 - scalaris.JSONConnection.process_result_vm_delete_no (*static method*), 4
 - scalaris.JSONConnection.process_result_vm_delete_no (*static method*), 4

- scalaris.JSONConnection.process_result_vm_delete (static method), 4
- scalaris.JSONConnection.process_result_vm_get_info (static method), 4
- scalaris.JSONConnection.process_result_vm_get_nodes (static method), 4
- scalaris.JSONConnection.process_result_vm_get_number_of_nodes (static method), 4
- scalaris.JSONConnection.process_result_vm_get_other_vms (static method), 4
- scalaris.JSONConnection.process_result_vm_get_status (static method), 3
- scalaris.JSONConnection.process_result_write (static method), 3
- scalaris.KeyChangedError (class), 9–10
- scalaris.LockError (class), 17–18
- scalaris.NodeNotFoundError (class), 10–11
- scalaris.NotAListError (class), 12–13
- scalaris.NotANumberError (class), 13–14
- scalaris.NotFoundError (class), 11–12
- scalaris.ReplicatedDHT (class), 25–27
 - scalaris.ReplicatedDHT.close_connection (method), 26
 - scalaris.ReplicatedDHT.delete (method), 26
 - scalaris.ReplicatedDHT.get_last_delete_result (method), 26
 - scalaris.ReplicatedDHT.nop (method), 26
- scalaris.RoutingTable (class), 27
 - scalaris.RoutingTable.get_replication_factor (method), 27
- scalaris.ScalarisError (class), 5–6
- scalaris.ScalarisVM (class), 27–29
 - scalaris.ScalarisVM.addNodes (method), 28
 - scalaris.ScalarisVM.close_connection (method), 29
 - scalaris.ScalarisVM.getInfo (method), 28
 - scalaris.ScalarisVM.getNodes (method), 28
 - scalaris.ScalarisVM.getNumberOfNodes (method), 28
 - scalaris.ScalarisVM.getOtherVMs (method), 29
 - scalaris.ScalarisVM.getVersion (method), 28
 - scalaris.ScalarisVM.killNode (method), 28
 - scalaris.ScalarisVM.killNodes (method), 28
 - scalaris.ScalarisVM.killNodesByName (method), 28
 - scalaris.ScalarisVM.killVM (method), 29
 - scalaris.ScalarisVM.nop (method), 29
 - scalaris.ScalarisVM.shutdownNode (method), 28
 - scalaris.ScalarisVM.shutdownNodes (method), 28
 - scalaris.ScalarisVM.shutdownNodesByName (method), 28
 - scalaris.ScalarisVM.shutdownVM (method), 29
- scalaris.str_to_list (function), 2
- scalaris.TimeoutError (class), 14–16
- scalaris.Transaction (class), 23–25
 - scalaris.Transaction.abort (method), 24
 - scalaris.Transaction.add_del_on_list (method), 25
 - scalaris.Transaction.add_on_nr (method), 25
 - scalaris.Transaction.close_connection (method), 25
 - scalaris.Transaction.commit (method), 24
 - scalaris.Transaction.new_req_list (method), 23
 - scalaris.Transaction.nop (method), 25
 - scalaris.Transaction.process_result_add_del_on_list (method), 24
 - scalaris.Transaction.process_result_add_on_nr (method), 24
 - scalaris.Transaction.process_result_read (method), 23
 - scalaris.Transaction.process_result_test_and_set (method), 24
 - scalaris.Transaction.process_result_write (method), 24
 - scalaris.Transaction.read (method), 24

- scalaris.Transaction.req_list (*method*), 23
- scalaris.Transaction.test_and_set (*method*), 25
- scalaris.Transaction.write (*method*), 24
- scalaris.TransactionSingleOp (*class*), 20–23
- scalaris.TransactionSingleOp.add_del_on_list (*method*), 22
- scalaris.TransactionSingleOp.add_on_nr (*method*), 22
- scalaris.TransactionSingleOp.close_connections (*method*), 22
- scalaris.TransactionSingleOp.new_req_list (*method*), 21
- scalaris.TransactionSingleOp.nop (*method*), 22
- scalaris.TransactionSingleOp.process_result_async (*method*), 21
- scalaris.TransactionSingleOp.process_result_async_batch (*method*), 22
- scalaris.TransactionSingleOp.process_result_read (*method*), 21
- scalaris.TransactionSingleOp.process_result_test_and_set (*method*), 22
- scalaris.TransactionSingleOp.process_result_write (*method*), 21
- scalaris.TransactionSingleOp.read (*method*), 22
- scalaris.TransactionSingleOp.req_list (*method*), 21
- scalaris.TransactionSingleOp.test_and_set (*method*), 22
- scalaris.TransactionSingleOp.write (*method*), 22
- scalaris.UnknownError (*class*), 18–19
- scalaris_bench (*module*), 32–61
- scalaris_bench.BenchRunnable (*class*), 32–34
- scalaris_bench.BenchRunnable.cleanup (*method*), 33
- scalaris_bench.BenchRunnable.getSpeed (*method*), 33
- scalaris_bench.BenchRunnable.init (*method*), 33
- scalaris_bench.BenchRunnable.operation (*method*), 33
- scalaris_bench.BenchRunnable.pre_init (*method*), 33
- scalaris_bench.BenchRunnable.shouldStop (*method*), 33
- scalaris_bench.BenchRunnable2 (*class*), 34–35
- scalaris_bench.minibench (*function*), 32
- scalaris_bench.run_from_cmd (*function*), 32
- scalaris_bench.TransAppendToListBench (*class*), 55–56
- scalaris_bench.TransAppendToListBench.operation2 (*method*), 56
- scalaris_bench.TransAppendToListBench1 (*class*), 56–58
- scalaris_bench.TransAppendToListBench2 (*class*), 58–59
- scalaris_bench.TransAppendToListBench3 (*class*), 59–61
- scalaris_bench.TransBench1 (*class*), 39–40
- scalaris_bench.TransBench2 (*class*), 40–41
- scalaris_bench.TransBench3 (*class*), 41–43
- scalaris_bench.TransIncrementBench (*class*), 43–44
- scalaris_bench.TransIncrementBench.operation2 (*method*), 44
- scalaris_bench.TransIncrementBench1 (*class*), 44–46
- scalaris_bench.TransIncrementBench2 (*class*), 46–47
- scalaris_bench.TransIncrementBench3 (*class*), 47–49
- scalaris_bench.TransRead5Write5Bench1 (*class*), 50–52
- scalaris_bench.TransRead5Write5Bench2 (*class*), 52–53
- scalaris_bench.TransRead5Write5Bench3 (*class*), 53–55
- scalaris_bench.TransReadXWriteXBench (*class*), 49–50
- scalaris_bench.TransReadXWriteXBench.operation2 (*method*), 50
- scalaris_bench.TransSingleOpBench1 (*class*),

35–36
scalaris_bench.TransSingleOpBench2 (*class*),
36–37
scalaris_bench.TransSingleOpBench3 (*class*),
37–39