# torch

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 3)

Unknown directive type "automodule".

... automodule:: torch
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 4)

Unknown directive type "currentmodule".

.. currentmodule:: torch

### **Tensors**

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 8)

Unknown directive type "autosummary".

```
.. autosummary::
    :toctree: generated
    :nosignatures:

    is_tensor
    is_storage
    is_complex
    is_conj
    is_floating_point
    is_nonzero
    set_default_dtype
    get_default_tensor_type
    numel
    set_printoptions
    set_flush_denormal
```

### **Creation Ops**

#### Note

Random sampling creation ops are listed under ref. 'random-sampling' and include: :func: 'torch.rand' :func: 'torch.rand\_ like' :func: 'torch.randint' :func: 't

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink

Unknown interpreted text role "ref".
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs]

Unknown interpreted text role "func".

[source] torch.rst, line 31); backlink

[source] torch.rst, line 31); backlink

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs]

Unknown interpreted text role "func".

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink

Unknown interpreted text role "func".
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink

Unknown interpreted text role "func".
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink
Unknown interpreted text role "func".
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink

Unknown interpreted text role "func".
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink
Unknown interpreted text role "func".
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink

Unknown interpreted text role "func".
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink

Unknown interpreted text role "ref".
```

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 31); backlink

Unknown interpreted text role "class".
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 44)

Unknown directive type "autosummary".

```
.. autosummary::
    :toctree: generated
    :nosignatures:

    tensor
    sparse_coo_tensor
    asarray
    as_tensor
    as_strided
    from_numpy
```

```
from dlpack
frombuffer
zeros
zeros like
ones
ones like
arange
range
linspace
logspace
eye
empty
empty like
empty_strided
full
full like
quantize_per_tensor
quantize_per_channel dequantize
complex
polar
heaviside
```

## Indexing, Slicing, Joining, Mutating Ops

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-
master\docs\source\[pytorch-master][docs][source]torch.rst, line 81)
Unknown directive type "autosummary".
   .. autosummary::
       :toctree: generated
       :nosignatures:
       adjoint
       argwhere
       cat
       concat
       conj
       chunk
       dsplit
       column stack
       dstack
       gather
       hsplit
       hstack
       index_add
       index_copy
       index select
       masked_select
       movedim
       moveaxis
       narrow
       nonzero
       permute
       reshape
       row_stack
       select
       scatter
       diagonal_scatter
       select scatter
       slice_scatter
       scatter add
       scatter_reduce
       split
       squeeze
       stack
       swapaxes
       swapdims
       take
       take along dim
       tensor_split
       tile
       transpose
       unbind
       unsqueeze
       vsplit
       vstack
```

### Generators

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 136)

Unknown directive type "autosummary".

... autosummary::
    :toctree: generated
    :nosignatures:

Generator
```

# **Random sampling**

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 146)

Unknown directive type "autosummary".
```

```
.. autosummary::
    :toctree: generated
    :nosignatures:
    seed
    manual_seed
    initial_seed
    get_rng_state
    set_rng_state
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 156)

Unknown directive type "autoattribute".

```
.. autoattribute:: torch.default_generator
:annotation: Returns the default CPU torch.Generator
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 165)

Unknown directive type "autosummary".

```
.. autosummary::
    :toctree: generated
    :nosignatures:

    bernoulli
    multinomial
    normal
    poisson
    rand
    rand_like
    randint
    randint_like
    randn
    rand_like
    randn
    rand_like
    randn
```

### In-place random sampling

There are a few more in-place random sampling functions defined on Tensors as well. Click through to refer to their documentation:

• :func:`torch.Tensor.bernoulli\_` - in-place version of :func:`torch.bernoulli`

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-
```

resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 188); backlink

Unknown interpreted text role "func".

Unknown interpreted text role "func".

• :func: torch.Tensor.cauchy\_` - numbers drawn from the Cauchy distribution

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 189); backlink

Unknown interpreted text role "func".

• :func:`torch.Tensor.exponential `- numbers drawn from the exponential distribution

 $System \, Message: ERROR/3 \, (\texttt{D:\onboarding-resources\sample-onboarding-resources\space-master\docs\source\[pytorch-master\] [docs] [source] \, torch.rst, \, line \, 190); \, backlink$ 

Unknown interpreted text role "func".

• :func: torch. Tensor.geometric\_` - elements drawn from the geometric distribution

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 191); backlink

Unknown interpreted text role "func".

• :func:\torch.Tensor.log normal \`- samples from the log-normal distribution

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 192); backlink

Unknown interpreted text role "func".

• :func: 'torch. Tensor.normal ' - in-place version of :func: 'torch.normal'

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 193); backlink

Unknown interpreted text role "func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 193); backlink

Unknown interpreted text role "func".

• :func: torch. Tensor.random ` - numbers sampled from the discrete uniform distribution

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 194); backlink

Unknown interpreted text role "func".

• :func: torch. Tensor. uniform ` - numbers sampled from the continuous uniform distribution

 $System\ Message:\ ERROR/3\ (\texttt{D:\onboarding-resources}\ sample-onboarding-resources\ pytorch-master\ docs\ source\ [pytorch-master]\ [docs]\ [source]\ torch.rst,\ line\ 195);\ backlink$ 

Unknown interpreted text role "func".

## **Quasi-random sampling**

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master][docs][source]torch.rst, line 199)

Unknown directive type "autosummary".

.. autosummary::
    :toctree: generated
    :nosignatures:
    :template: sobolengine.rst

quasirandom.SobolEngine
```

### Serialization

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 208)

Unknown directive type "autosummary".

... autosummary::
    :toctree: generated
    :nosignatures:

save
    load
```

### **Parallelism**

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 217)

Unknown directive type "autosummary".

.. autosummary::
    :toctree: generated
    :nosignatures:

    get_num_threads
    set_num_threads
    get_num_interop_threads
    set_num_interop_threads
```

# Locally disabling gradient computation

Unknown interpreted text role "func".

The context managers :func:`torch.no\_grad`, :func:`torch.enable\_grad`, and :func:`torch.set\_grad\_enabled` are helpful for locally disabling and enabling gradient computation. See ref.`locally-disable-grad` for more details on their usage. These context managers are thread local, so they won't work if you send work to another thread using the threading module, etc.

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 228); backlink
Unknown interpreted text role "func".
```

```
System \, Message: ERROR/3 \, (\texttt{D:\noboarding-resources\sample-onboarding-resources\pytorch-master\scale}); \, backlink \, and the property of the property of
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 228); backlink

Unknown interpreted text role "func".

 $System\,Message: ERROR/3~(\texttt{D:}\conboarding-resources}\conboarding-resources\\conboardin$ 

Unknown interpreted text role 'ref'.

#### Examples:

```
>>> x = torch.zeros(1, requires_grad=True)
>>> with torch.no grad():
... y = x * 2
>>> y.requires grad
False
>>> is train = False
>>> with torch.set_grad_enabled(is_train):
      y = x * 2
>>> y.requires_grad
False
>>> torch.set grad enabled(True) # this can also be used as a function
>>> y = x * 2
>>> y.requires_grad
True
>>> torch.set_grad_enabled(False)
>>> y = x * 2
>>> y.requires_grad
False
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 258)

Unknown directive type "autosummary".

```
.. autosummary::
    :toctree: generated
    :nosignatures:

    no_grad
    enable_grad
    set_grad_enabled
    is_grad_enabled
    inference_mode
    is inference mode enabled
```

# Math operations

### **Pointwise Ops**

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 275)
```

Unknown directive type "autosummary".

```
.. autosummary::
    :toctree: generated
    :nosignatures:

    abs
    absolute
    acos
    arccos
    acosh
    arccosh
    add
    addcdiv
    addcmul
    angle
    asin
```

```
arcsin
asinh
arcsinh
atan
arctan
atanh
arctanh
atan2
arctan2
bitwise_not
bitwise_and bitwise_or
bitwise xor
bitwise_left_shift
bitwise_right_shift
ceil
{\tt clamp}
clip
conj_physical
copysign
cos
cosh
deg2rad
div
divide
digamma
erf
erfc
erfinv
ехр
exp2
expm1
{\tt fake\_quantize\_per\_channel\_affine}
fake_quantize_per_tensor_affine
fix
float_power
floor
floor_divide
fmod
frac
frexp
gradient
imag
ldexp
lerp
lgamma
log
log10
log1p
log2
logaddexp
logaddexp2
logical and
logical not
logical_or
logical_xor
logit
hypot
i0
igamma
igammac
mul
multiply
mvlgamma
nan_to_num
neg
negative
nextafter
polygamma
positive
pow
quantized_batch_norm
quantized_max_pool1d
quantized_max_pool2d
rad2deg
real
reciprocal
remainder
round
rsqrt
sigmoid
```

```
sign
sgn
signbit
sin
sinc
sinc
sinh
sqrt
square
sub
subtract
tan
tanh
true_divide
trunc
xlogy
```

## **Reduction Ops**

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-
master\docs\source\[pytorch-master][docs][source]torch.rst, line 389)
Unknown directive type "autosummary".
   .. autosummary::
       :toctree: generated
       :nosignatures:
       argmax
       argmin
       amax
       amin
       aminmax
       all
       any
       max
       min
       dist
       logsumexp
       mean
       nanmean
       median
       nanmedian
       mode
       norm
       nansum
       prod
       quantile
       nanquantile
       std
       std_mean
       unique
       unique_consecutive
       var
       var mean
       count nonzero
```

## **Comparison Ops**

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master][docs][source] torch.rst, line 425)

Unknown directive type "autosummary".

.. autosummary::
    :toctree: generated
    :nosignatures:

allclose
    argsort
    eq
    equal
    ge
    greater_equal
    gt
    greater
```

```
isclose
isfinite
isin
isinf
isposinf
isneginf
isnan
isreal
kthvalue
le
less equal
lt
less
maximum
minimum
fmax
fmin
ne
not_equal
sort
topk
msort
```

## **Spectral Ops**

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master][docs][source]torch.rst, line 463)

Unknown directive type "autosummary".

.. autosummary:
    :toctree: generated
    :nosignatures:

stft
    istft
    bartlett_window
    blackman_window
    hamming_window
    hann_window
    kaiser_window
```

## **Other Operations**

```
System\,Message:\,ERROR/3\,(\texttt{D:}\ \texttt{\conboarding-resources}\ \texttt{\conboarding
master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 479)
Unknown directive type "autosummary".
                        .. autosummary::
                                                   :toctree: generated
                                                  :nosignatures:
                                               atleast_1d
atleast_2d
                                                  atleast 3d
                                                 bincount
                                                  block_diag
                                                 broadcast tensors
                                                 broadcast_to
                                                 broadcast shapes
                                               bucketize
                                                  cartesian prod
                                                  cdist
                                                  clone
                                                  combinations
                                                  corrcoef
                                                  cov
                                                 cross
                                                  cummax
                                                  cummin
                                                  cumprod
                                                  cumsum
                                                  diag
```

```
diag embed
diagflat
diagonal
diff
einsum
flatten
flip
fliplr
flipud
kron
rot90
gcd
histc
histogram
histogramdd
meshgrid
lcm
logcumsumexp
ravel
renorm
repeat_interleave
roll
searchsorted
tensordot
tril
tril indices
triu
triu indices
vander
view_as_real
view_as_complex
resolve_conj
resolve neg
```

## **BLAS and LAPACK Operations**

orgqr ormqr outer

```
System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-
\verb|master| docs \\ | [pytorch-master] [docs] [source] \\ | torch.rst, \\ line 542)
Unknown directive type "autosummary".
   .. autosummary::
       :toctree: generated
       :nosignatures:
       addbmm
       addmm
       addmv
       addr
       baddbmm
       bmm
       chain matmul
       cholesky
       cholesky inverse
       cholesky_solve
       dot
       eig
       geqrf
       ger
       inner
       inverse
       det
       logdet
       slogdet
       lstsq
       lu
       lu_solve
       lu unpack
       matmul
       matrix power
       matrix rank
       matrix_exp
       mv
```

```
pinverse
qr
solve
svd
svd_lowrank
pca_lowrank
symeig
lobpcg
trapz
trapezoid
cumulative_trapezoid
triangular_solve
vdot
```

## **Utilities**

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 594)

Unknown directive type "autosummary".

```
.. autosummary::
   :toctree: generated
   :nosignatures:
   compiled with cxx11 abi
   result type
   can cast
   promote_types
   use_deterministic_algorithms
   are deterministic algorithms enabled
   is_deterministic_algorithms_warn_only_enabled
   set_deterministic_debug_mode
   get deterministic debug mode
   set warn always
   is_warn_always_enabled
   vmap
    _assert
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 614)

Unknown directive type "py:module".

.. py:module:: torch.contrib

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\pytorch-master\docs\source\[pytorch-master] [docs] [source] torch.rst, line 615)

Unknown directive type 'py:module'.

.. py:module:: torch.utils.backcompat

 $System\,Message: ERROR/3 \ (\c : \c sample-onboarding-resources \c sample-onboarding-resourc$ 

Unknown directive type "py:module".

.. py:module:: torch.utils

 $System\,Message:\,ERROR/3\, (\mbox{D:\noboarding-resources}\) ample-onboarding-resources \) pytorch-master \] [docs] [source] torch.rst, line 621)$ 

Unknown directive type "py:module".

.. py:module:: torch.utils.hipify

 $System\,Message:\,ERROR/3\, (\mbox{D:\noboarding-resources}\) ample-onboarding-resources \) pytorch-master\) [docs] [source] torch.rst, line 625)$ 

Unknown directive type "py:module".

.. py:module:: torch.utils.model\_dump