

Apache Spark Hello World

Create Spark Cluster on Azure

Download Data File

- Open SSH Console

```
ssh horton@nt-hw-spark-ssh.azurehdinsight.net
```

- make directory

```
mkdir /tmp/data
cd /tmp/data
```

- download the zip File

```
wget https://www.dropbox.com/s/dw6r9icy8tse9dc/data.zip?dl=1 -O /tmp/data.zip
```

- unzip the file

```
unzip /tmp/data.zip
```

- upload data to hdfs

```
hadoop fs -put * /tmp
```

Launch Jupyter

Count the words

```
sc

u'<pyspark.context.SparkContext object at 0x7fc92dbffb10>'

sc.appName
```

```
u"u'remotesparkmagics_4d6fc4ba-c44a-469e-a9aa-703bb5aaaaa8'"
```

```
sc.master
```

```
u"u'yarn-cluster"
```

```
baseRdd=sc.textFile("/tmp/selfishgiant.txt")
```

```
u''
```

```
baseRdd.take(1)
```

```
u'[u"Every afternoon, as they were coming from school, the children used to go and
play in the Giant's garden."]'
```

```
splitRdd = baseRdd.flatMap(lambda line: line.split(" "))
```

```
u''
```

```
splitRdd.take(5)
```

```
u"[u'Every', u'afternoon,', u'as', u'they', u'were']"
```

```
mappedRdd = splitRdd.map(lambda line: (line,1))
```

```
u''
```

```
mappedRdd.take(5)
```

```
u"[(u'Every', 1), (u'afternoon,', 1), (u'as', 1), (u'they', 1), (u'were', 1)]"
```

```
reducedRdd = mappedRdd.reduceByKey(lambda a,b: a+b)
```

```
u''
```

```
reducedRdd.take(20)
```

```
u'[(\'', 186), (u'garden,\'', 2), (u'all\'', 11), (u'stole\'', 1), (u'Through\''
, 1), (u'cried\'', 3), (u'hand,\'', 1), (u"\'I", 4), (u'over\'', 4), (u'What\'', 1
), (u'more,\'', 1), (u'longer,\'', 1), (u'through\'', 3), (u'go\'', 1), (u'cold\''
, 1), (u'hate\'', 1), (u'bitterly.\'', 1), (u'thee?\'', 2), (u'lessons\'', 1), (u\
'TRESPASSERS\'', 1)]'
```

```
reducedRdd.collect()
```

```
u'[(\'', 186), (u'garden,\'', 2), (u'all\'', 11), (u'Through\'', 1), (u'cried\''
, 3), (u'hand,\'', 1), (u"\'I", 4), (u'over\'', 4), (u'Frost.\'', 1), (u'prints\''
, 2), (u'front\'', 1), (u'through\'', 3), (u'more,\'', 1), (u'talk\'', 1), (u'col
d\'', 1), (u'hate\'', 1), (u'hole\'', 1), (u'thee?\'', 2), (u'wonder,\'', 1), (u"\'
You", 2), (u'certainly\'', 1), (u'here?\'', 1), (u'downstairs\'', 1), (u'had\'', 1
3), (u'behind\'', 1), (u'Here\'', 1), (u'late\'', 1), (u'wall\'', 3), (u'tears\''
, 1), (u'WILL\'', 1), (u'nor\'', 1), (u'rich\'', 1), (u"selfish,\'', 1), (u'sorry\''
, 2), (u'seen.\'', 1), (u'merely\'', 1), (u'hope\'', 1), (u'outside\'', 1), (u"\'
We", 1), (u'me\'', 1), (u'them\'', 2), (u'return\'', 1), (u'stole\'', 1), (u'3\'
, 1), (u'very\'', 7), (u'boy.\'', 1), (u'bid\'', 1), (u'stop\'', 1), (u'trees\''
, 4), (u'fast\'', 1), (u'underneath\'', 1), (u'grey,\'', 1), (u'every\'', 2), (u'th
e\'', 17), (u'not\'', 10), (u'dressing.\'', 1), (u'bitterly.\'', 1), (u'child.\'',
3), (u'above\'', 2), (u'birds.\'', 1), (u'school\'', 1), (u'there,\'', 1), (u'Sud
denly\'', 1), (u'Downstairs\'', 1), (u'large\'', 1), (u'did\'', 6), (u'delightful\''
, 1), (u'dusty\'', 1), (u'stopped\'', 1), (u"so", 1), (u'hung\'', 1), (u'went\''
, 3), (u'notice-board.\'', 1), (u'where\'', 2), (u'soft\'', 1), (u'open\'', 1), (
u'blew\'', 1), (u'old\'', 1), (u'For\'', 1), (u'doing\'', 1), (u"to-morrow,\'', 1)
, (u'some\'', 1), (u'play\'', 5), (u'dead\'', 1), (u'standing\'', 1), (u"thou?\''
, 1), (u'go\'', 1), (u'Only\'', 2), (u'been\'', 1), (u'children,\'', 1), (u'roof\''
, 1), (u'weather.\'', 1), (u'small\'', 1), (u'hastened\'', 1), (u'here!\'', 1), (u
'Autumn\'', 1), (u'best\'', 1), (u'that,\'', 1), (u'by.\'', 1), (u'what\'', 1), (u\
'stood\'', 2), (u'again,\'', 1), (u'for\'', 9), (u'singing\'', 1), (u'round.\'', 1
), (u'him.\'', 3), (u'I\'', 8), (u'him,\'', 2), (u"\'What", 1), (u'softly,\'', 1),
(u'pearl,\'', 1), (u'Paradise.\'', 1), (u'ever\'', 2), (u'red\'', 1), (u'Frost,\''
, 1), (u'we\'', 3), (u'this\'', 1), (u'other.\'', 2), (u'limited.\'', 1), (u"\'My
", 1), (u'nails\'', 1), (u'little\'', 18), (u'here\'', 2), (u'hours\'', 1), (u'kn
ocked\'', 1), (u'What\'', 1), (u'let\'', 1), (u'wandering\'', 1), (u'put\'', 5), (u
\'North\'', 4), (u'come\'', 4), (u'change\'', 1), (u'world.\'', 1), (u'the", 1),
(u'waving\'', 1), (u'great\'', 3), (u'her\'', 1), (u'played,\'', 1), (u'been!\''
, 1), (u'could\'', 4), (u'running\'', 1), (u'Hail\'', 3), (u'chimney-pots\'', 1), (u
'games\'', 1), (u'PROSECUTED\'', 1), (u'joy,\'', 1), (u'castle\'', 1), (u'TRESPAS
SERS\'', 1), (u'linnet\'', 1), (u'fruit.\'', 1), (u'out.\'', 2), (u'years.\'', 1),
(u'S\'But", 1), (u'BE\'', 85), (u'Giant\'', 15), (u'loved.\'', 1), (u'slipped\''
, 1), (u'bed\'', 2), (u'into\'', 7), (u'When\'', 1), (u'down\'', 4), (u'ask\'', 1),
(u'snow,\'', 1), (u'peach-trees\'', 1), (u'But\'', 4), (u'delicious\'', 1), (u'ar
t\'', 1), (u'frightened\'', 1), (u'The\'', 10), (u'market\'', 1), (u'Wind\'', 3), (
u'now\'', 2), (u'breath\'', 1), (u'Giant's", 4), (u"we", 1), (u'from\'', 3), (
u'would\'', 2), (u'coming,\'', 1), (u'Summer.\'', 1), (u'top\'', 1), (u'visit\''
, 1), (u'window\'', 2), (u'long\'', 2), (u'scene,\'', 1), (u'live\'', 1), (u'Every\''
, 3), (u'blossoms\'', 2), (u'wrapped\'', 1), (u'music\'', 1), (u'white\'', 4), (u
'know,\'', 1), (u'is\'', 7), (u'him.\'', 1), (u'a\'', 22), (u'eyes\'', 2), (u'onl
y\'', 3), (u'door\'', 1), (u'crying\'', 1), (u'voice,\'', 1), (u'painted\'', 1), (u
'about\'', 5), (u'wounds\'', 1), (u'spring-time\'', 1), (u'So\'', 4), (u'broke\''
, 3), (u'branches\'', 4), (u'children,\'', 3), (u'wound\'', 2), (u'with\'', 14), (u
'themselves\'', 1), (u'glad\'', 1), (u'And\'', 9), (u'high\'', 2), (u'kind\'', 1),
(u'in,\'', 1), (u'armchair,\'', 1), (u'these\'', 1), (u'was\'', 32), (u'tree\''
, 4), (u'see\'', 3), (u"\'This", 1), (u'there,\'', 1), (u'will\'', 5), (u'Giant\''
, 3), (u'near\'', 1), (u'resting\'', 1), (u'But\'', 1), (u'They\'', 2), (u'lived,\''
, 1), (u'my\'', 4), (u'invited\'', 1), (u'beautiful\'', 7), (u'it.\'', 2), (u\
'seven\'', 2), (u'understand\'', 2), (u'flowers,\'', 1), (u'ran\'', 5), (u'said:\''
, 1), (u'it,\'', 3), (u'sad.\'', 1), (u'autumn\'', 1), (u'longer,\'', 1), (u'see
?\'', 1), (u'road\'', 1), (u'have\'', 3), (u'back.\'', 1), (u'coming.\'', 1), (u'g
lass\'', 1), (u'said,\'', 2), (u'bore\'', 1), (u'as\'', 9), (u'garden.\'', 5), (u\
'laughing.\'', 1), (u'garden,\'', 6), (u'Spring.\'', 1), (u'rubbed\'', 1), (u'swor
d\'', 1), (u'saw\'', 5), (u'when\'', 9), (u'off\'', 1), (u'stayed\'', 1), (u'roari
ng,\'', 1), (u"\'Climb", 1), (u'5\'', 1), (u'said.\'', 1), (u'which\'', 1), (u'gre
en\'', 2), (u'you\'', 2), (u'boy.\'', 1), (u'poor\'', 3), (u'pink\'', 1), (u'marve
llous\'', 1), (u'again.\'', 2), (u'palms\'', 1), (u'may\'', 1), (u'could;\'', 1), (
u'neck,\'', 1), (u'reach\'', 1), (u'grass,\'', 2), (u'silver.\'', 1), (u'afternoon
,\'', 3), (u'arrived\'', 1), (u'but\'', 6), (u'smiled\'', 1), (u'head\'', 1), (u'
awe\'', 1), (u'passing\'', 1), (u'died\'', 1), (u"\'but", 2), (u'thought\'', 1), (u
'All\'', 1), (u'to-day\'', 1), (u'sweetly\'', 1), (u'lessons\'', 1), (u'came\''
, 9), (u'ogre,\'', 1), (u'cloak,\'', 1), (u'looked\'', 5), (u'back,\'', 1), (u'so\''
, 10), (u'golden,\'', 1), (u'allow\'', 1), (u'feeble.\'', 1), (u'awake\'', 1), (u\
'the\'', 148), (u'looking\'', 1), (u'Winter.\'', 2), (u'lying\'', 2), (u'Who", 3),
(u'since\'', 1), (u'Winter\'', 3), (u'children;\'', 1), (u'don't", 1), (u'wall,\''
, 1), (u'felt\'', 1), (u'wall.\'', 1), (u'seen\'', 2), (u'tree,\'', 3), (u'tree
.\'', 1), (u'BE\'', 1), (u'feet.\'', 1), (u'corner\'', 3), (u'still\'', 3), (u'chi
ldren\'', 15), (u'before\'', 1), (u'one\'', 2), (u'Cornish\'', 1), (u'now\'', 1), (
u'inside\'', 1), (u"\'Spring", 1), (u'companion?\'', 1), (u'grass\'', 3), (u'friu
it\'', 2), (u'day\'', 4), (u'to\'', 38), (u'strange\'', 1), (u'4\'', 1), (u'under\''
, 1), (u'covered\'', 5), (u'has\'', 3), (u'run,\'', 1), (u'gave\'', 2), (u'then\''
, 2), (u'his\'', 17), (u'garden\'', 11), (u'stay\'', 1), (u'sitting\'', 1), (u"\'
now", 1), (u'floss,\'', 1), (u'flower\'', 1), (u'child;\'', 1), (u'knel\'', 1), (u\
'blossoms,\'', 1), (u'sight.\'', 1), (u'cannot\'', 1), (u'know\'', 2), (u'hands\''
, 1), (u'sown\'', 3), (u'2\'', 1), (u'years\'', 1), (u'him\'', 11), (u'Once\'', 1),
(u'knock\'', 1), (u'like\'', 4), (u'came.\'', 2), (u'hath\'', 2), (u'always\'', 1)
, (u'delicate\'', 1), (u'heads.\'', 1), (u'ever.\'', 1), (u'slates,\'', 1), (u'mo
rning\'', 2), (u'heard\'', 1), (u'sang\'', 2), (u'Wind\'', 1), (u'stars,\'', 1), (
u'she\'', 2), (u'each\'', 2), (u'found\'', 2), (u'them,\'', 1), (u'out\'', 8), (u\
'round\'', 6), (u'ears\'', 1), (u'twelve\'', 2), (u'head,\'', 1), (u"\'It", 1), (u\
'often\'', 1), (u'dancing\'', 1), (u'people\'', 2), (u'me,\'', 1), (u'frost\'', 1),
(u'Hail,\'', 1), (u'back\'', 2), (u'ice.\'', 1), (u"last,\'', 1), (u'away.\'', 1)
, (u'sure\'', 1), (u'are\'', 4), (u'forgot\'', 1), (u'close\'', 1), (u'perfume\''
, 1), (u'wander\'', 1), (u'really\'', 2), (u'twittering\'', 1), (u'said\'', 11), (u
'there\'', 6), (u'opened\'', 1), (u'children?\'', 2), (u'Frost\'', 1), (u'shall\''
, 2), (u'birds\'', 4), (u"he", 1), (u'determined\'', 1), (u'playground\'', 1), (
u'before;\'', 1), (u'seemed\'', 1), (u'across\'', 1), (u'He\'', 10), (u'none.\'',
1), (u'be\'', 5), (u'full\'', 2), (u'delight,\'', 1), (u'Tree,\'', 1), (u'down.\''
, 1), (u'school,\'', 1), (u'never\'', 3), (u'go.\'', 1), (u'quite\'', 4), (u'dres
sed\'', 1), (u'chairs\'', 1), (u'him!\'', 1), (u'them.\'', 1), (u'axe\'', 1), (u'o
ne\'', 3), (u'say\'', 1), (u'say,\'', 1), (u'care,\'', 1), (u'asleep,\'', 1), (u'o
n\'', 10), (u'sleep.\'', 1), (u"\'How", 4), (u'your\'', 3), (u'rattled\'', 1), (u\
'<\'', 4), (u'of\'', 19), (u'Years\'', 1), (u'bird\'', 1), (u'became\'', 1), (u'her
e.\'', 1), (u'forgotten\'', 1), (u'music.\'', 1), (u'play.\'', 1), (u'Giant.\'', 3)
, (u'silver\'', 1), (u'Giant,\'', 4), (u'golden\'', 1), (u'flying\'', 1), (u'danc
ed\'', 1), (u'Then\'', 3), (u'gone\'', 1), (u'ground\'', 1), (u'sweet\'', 1), (u'Ki
ng\''s", 1), (u'coming\'', 1), (u'year\'', 1), (u'Snow\'', 1), (u'two\'', 3), (u'o
rder\'', 1), (u'because\'', 1), (u'stretched\'', 1), (u'sing\'', 2), (u'done.\'', 1)
, (u'blossoms.\'', 2), (u'farthest\'', 2), (u'furs,\'', 1), (u'he\'', 44), (u'ro
aring\'', 1), (u'spoke\'', 1), (u'answered\'', 2), (u'played\'', 1), (u'casement.\''
, 1), (u'arms\'', 2), (u'castle.\'', 1), (u'their\'', 1), (u'wonderful\'', 1), (u\
'tool\'', 2), (u'trees.\'', 2), (u'games,\'', 1), (u'lovely\'', 4), (u'tell\'', 1),
(u'wicked\'', 1), (u'roared\'', 1), (u'myself.\'', 1), (u'said;\'', 2), (u'jumpe
d\'', 1), (u'big\'', 1), (u'boy\'', 7), (u'believe\'', 1), (u'looked.\'', 1), (u'p
leased\'', 1), (u'took\'', 2), (u'gently\'', 2), (u"\'He", 1), (u'road,\'', 1), (u\
'cried,\'', 1), (u'listen\'', 1), (u'low\'', 1), (u'child\'', 1), (u'flowers\''
, 4), (u'must\'', 3), (u'loved\'', 2), (u'grew\'', 2), (u'sounded\'', 1), (u'garden;\''
, 1), (u'blossom,\'', 1), (u'blossom.\'', 1), (u'up\'', 6), (u'anger,\'', 1), (u\
'gruff\'', 1), (u'melted\'', 1), (u'can\'', 1), (u'blowing\'', 1), (u'were\'', 21),
(u'again\'', 1), (u'>\'', 4), (u'playing\'', 2), (u"spot,\'', 1), (u'notice-boar
d\'', 1), (u'After\'', 1), (u'slay\'', 1), (u'admired\'', 1), (u'friend,\'', 1), (u'ce
ased\'', 1), (u'bent\'', 1), (u'slack\'', 1), (u'up!\'', 1), (u'flung\'', 1), (u'cover\'', 3), (
u'it\'', 16), (u'heard\'', 2), (u'came,\'', 1), (u'evening\'', 1), (u'at\'', 6), (
u'in\'', 28), (u'watched\'', 1), (u'happy\'', 2), (u'kissed\'', 2), (u'yet\'', 1),
(u'any\'', 2), (u'whom\'', 1), (u'huge\'', 1), (u'away,\'', 1), (u'three\'', 1),
(u'winter\'', 1), (u'conversation\'', 1), (u'country\'', 1), (u'nobody\'', 1), (u\
'that\'', 18), (u'who\'', 1), (u'till\'', 1), (u'nowhere\'', 1), (u'other\'', 1), (u\
'take\'', 1), (u'dared\'', 2), (u'no\'', 1), (u'furs,\'', 1), (u'sat\'', 3), (u
'Love.\'', 1), (u'longed\'', 1), (u'Selfish\'', 2), (u'used\'', 4), (u'tried\'', 1)
, (u'o'clock", 1), (u'nails,\'', 1), (u'knew\'', 1), (u'away.\'', 1), (u'Nay!\''
, 1), (u'most\'', 5), (u'fell\'', 1), (u'musicians\'', 1), (u'tiny.\'', 1), (u"v
isit.\'', 1), (u'good-bye.\'', 1), (u'gong\'', 1), (u'why\'', 2), (u'all.\'', 1), (u\
'tree.\'', 1), (u'window\'', 1), (u'selfish\'', 2), (u'Spring\'', 6), (u'many\''
, 1), (u'It\'', 6), (u'face\'', 1), (u"\'tell", 1), (u'crept\'', 2), (u"\'any", 1)
), (u'In\'', 2), (u'built\'', 1), (u'first\'', 1), (u'its\'', 2), (u'Its\'', 1), (
u'once\'', 2)]'
```