

Chapter10

POST cf_etf_morningstar_category_list

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "aggs": {
    "get_categories": { "terms": { "field": "morningstar_category", "size": 100 } }
  }
}
```

Example Request

cf_etf_morningstar_category_list

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data $'{"size":0,"aggs":{"get_categories":{"terms":{"field":"morningstar_category","size":100}}}}'
```

POST cf_etf_Diversified_Emerging_Mkts ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": { "match": { "morningstar_category": "Diversified Emerging Mkts" } },
  "aggs": {
    "LIST ETFs": {
      "terms": { "field": "symbol", "size": 16 }
    }
  }
}
```

Example Request

cf_etf_Diversified_Emerging_Mkts ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data $'{"size":0,"query":{"match":{"morningstar_category":"Diversified Emerging Mkts"}},\n"aggs":{"LIST ETFs":{"terms":{"field":"symbol","size":16}}}}'
```

POST cf_etf_hist_price_Diversified_Emerging_Mkts_changes_2018_12_26

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 16,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2018-12-26" } } },
      "should": [
        { "term": { "symbol": "dem" } },
        { "term": { "symbol": "dgre" } },
        { "term": { "symbol": "dgs" } },
        { "term": { "symbol": "dvem" } },
      ]
    }
  }
}
```

```

        {"term": {"symbol": "ediv"}},
        {"term": {"symbol": "eemx"}},
        {"term": {"symbol": "emcg"}},
        {"term": {"symbol": "emdv"}},
        {"term": {"symbol": "esge"}},
        {"term": {"symbol": "ewx"}},
        {"term": {"symbol": "pxh"}},
        {"term": {"symbol": "qemm"}},
        {"term": {"symbol": "rfem"}},
        {"term": {"symbol": "spem"}},
        {"term": {"symbol": "uevm"}},
        {"term": {"symbol": "xsoe"}}
    ],
    "minimum_should_match": 1
  },
  "aggs": {
    "day_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}

```

Example Request

cf_etf_hist_price_Diversified_Emerging_Mkts_changes_2018_12_26

```

curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data-raw '{
  "size": 16,
  "query": {
    "bool": {
      "must": {
        "range": {
          "date": {
            "gte": "2018-12-26",
            "lte": "2018-12-26"
          }
        }
      },
      "should": [
        {
          "term": {
            "symbol": "dem"
          }
        },
        {
          "term": {
            "symbol": "dgre"
          }
        },
        {
          "term": {
            "symbol": "dgs"
          }
        },
        {
          "term": {
            "symbol": "dvem"
          }
        },
        {
          "term": {
            "symbol": "ediv"
          }
        },
        {
          "term": {
            "symbol": "eemx"
          }
        },
        {
          "term": {
            "symbol": "emcg"
          }
        },
        {
          "term": {
            "symbol": "emdv"
          }
        },
        {
          "term": {
            "symbol": "esge"
          }
        },
        {
          "term": {
            "symbol": "ewx"
          }
        },
        {
          "term": {
            "symbol": "pxh"
          }
        },
        {
          "term": {
            "symbol": "qemm"
          }
        },
        {
          "term": {
            "symbol": "rfem"
          }
        },
        {
          "term": {
            "symbol": "spem"
          }
        },
        {
          "term": {
            "symbol": "uevm"
          }
        },
        {
          "term": {
            "symbol": "xsoe"
          }
        }
      ],
      "minimum_should_match": 1
    },
    "aggs": {
      "day_momentum": {
        "date_histogram": {
          "field": "date",
          "interval": "1d",
          "format": "yyyy-MM-dd",
          "min_doc_count": 1
        },
        "aggs": {
          "cv": {
            "scripted_metric": {
              "init_script": "state.totals=[]",
              "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
              "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count",
              "reduce_script": "return states[0]"
            }
          }
        }
      }
    }
  }
}'

```

POST cf_etf_hist_price_Diversified_Emerging_Mkts_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```

{
  "size": 0,
  "query": {
    "bool": {
      "must": {
        "range": {
          "date": {
            "gte": "2018-12-26",
            "lte": "2019-03-25"
          }
        }
      },
      "should": [
        {
          "term": {
            "symbol": "dem"
          }
        },
        {
          "term": {
            "symbol": "dgre"
          }
        },
        {
          "term": {
            "symbol": "dgs"
          }
        },
        {
          "term": {
            "symbol": "dvem"
          }
        },
        {
          "term": {
            "symbol": "ediv"
          }
        },
        {
          "term": {
            "symbol": "eemx"
          }
        },
        {
          "term": {
            "symbol": "emcg"
          }
        },
        {
          "term": {
            "symbol": "emdv"
          }
        },
        {
          "term": {
            "symbol": "esge"
          }
        },
        {
          "term": {
            "symbol": "ewx"
          }
        },
        {
          "term": {
            "symbol": "pxh"
          }
        },
        {
          "term": {
            "symbol": "qemm"
          }
        },
        {
          "term": {
            "symbol": "rfem"
          }
        },
        {
          "term": {
            "symbol": "spem"
          }
        },
        {
          "term": {
            "symbol": "uevm"
          }
        },
        {
          "term": {
            "symbol": "xsoe"
          }
        }
      ],
      "minimum_should_match": 1
    },
    "aggs": {
      "day_momentum": {
        "date_histogram": {
          "field": "date",
          "interval": "1d",
          "format": "yyyy-MM-dd",
          "min_doc_count": 1
        },
        "aggs": {
          "cv": {
            "scripted_metric": {
              "init_script": "state.totals=[]",
              "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
              "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count",
              "reduce_script": "return states[0]"
            }
          }
        }
      }
    }
  }
}

```

```

        {"term": {"symbol": "ewx"}},
        {"term": {"symbol": "pxh"}},
        {"term": {"symbol": "qemm"}},
        {"term": {"symbol": "rfem"}},
        {"term": {"symbol": "spem"}},
        {"term": {"symbol": "uevm"}},
        {"term": {"symbol": "xsoe"}}
    ],
    "minimum_should_match": 1
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}

```

Example Request

cf_etf_hist_price_Diversified_Emerging_Mkts_changes_daily

```

curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
data $'{"size":0,"query":{"bool":{"must":{"range":{"date":{"gte":"2018-12-26","lte":"2019-03-25"}}},"should":[{"term":{"symbol":"dem"}}, {"term":{"symbol":"dgre"}}, {"term":{"symbol":"dgs"}}, {"term":{"symbol":"dvem"}}, {"term":{"symbol":"ediv"}}, {"term":{"symbol":"eemx"}}, {"term":{"symbol":"emcg"}}, {"term":{"symbol":"emdv"}}, {"term":{"symbol":"esge"}}, {"term":{"symbol":"ewx"}}, {"term":{"symbol":"pxh"}}, {"term":{"symbol":"qemm"}}, {"term":{"symbol":"rfem"}}, {"term":{"symbol":"spem"}}, {"term":{"symbol":"uevm"}}, {"term":{"symbol":"xsoe"}}],"minimum_should_match":1},"aggs":{"daily_momentum":{"date_histogram":{"field":"date","interval":"1d","format":"yyyy-MM-dd","min_doc_count":1},"aggs":{"cv":{"scripted_metric":{"init_script":"state.totals=[]","map_script":"state.totals.add(doc.change.value*doc.volume.value)","combine_script":"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count","reduce_script":"return states[0]}}}}}}}'

```

POST cf_etf_hist_price_Diversified_Emerging_Mkts_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```

{
  "size": 100,
  "query": {
    "bool": {
      "must": {
        "range": {
          "date": {
            "gte": "2018-12-26",
            "lte": "2019-03-25"
          }
        }
      },
      "should": [
        {"term": {"symbol": "dem"}},
        {"term": {"symbol": "dgre"}},
        {"term": {"symbol": "dgs"}},
        {"term": {"symbol": "dvem"}},
        {"term": {"symbol": "ediv"}},
        {"term": {"symbol": "eemx"}},
        {"term": {"symbol": "emcg"}},
        {"term": {"symbol": "emdv"}},
        {"term": {"symbol": "esge"}},
        {"term": {"symbol": "ewx"}},
        {"term": {"symbol": "pxh"}},
        {"term": {"symbol": "qemm"}},
        {"term": {"symbol": "rfem"}},
        {"term": {"symbol": "spem"}},
        {"term": {"symbol": "uevm"}}
      ]
    }
  }
}

```

```
{ "term": { "symbol": "xsoe" } },
    ],
    "minimum_should_match": 1
}
},
"aggs" : {
  "weekly_momentum" : {
    "date_histogram" : {
      "field" : "date",
      "interval" : "1w",
      "format" : "yyyy-MM-dd",
      "min_doc_count": 1
    },
    "aggs": {
      "cv" : {
        "scripted_metric":{
          "init_script": "state.totals=[]",
          "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
          "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t;
total_count += 1} return total/total_count",
          "reduce_script": "return states[0]"
        }
      }
    }
  }
}
}
```

Example Request

cf etf hist prnce Diversified Emerging Mkts changes weekly

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data '{"size":100,"query":{"bool":{"must":{"range":{"date":{"gte":"2018-12-26"},"lte":"2019-03-25"}}},"should":[{"term":{"symbol":"dem"}},{term":{"symbol":"dgre"}},{term":{"symbol":"dgs"}},{term":{"symbol":"dvem"}},{term":{"symbol":"ediv"}},{term":{"symbol":"eemx"}},{term":{"symbol":"emcg"}},{term":{"symbol":"emdv"}},{term":{"symbol":"esge"}},{term":{"symbol":"ewx"}},{term":{"symbol":"pxh"}},{term":{"symbol":"qemm"}},{term":{"symbol":"rfem"}},{term":{"symbol":"spem"}},{term":{"symbol":"uevm"}},{term":{"symbol":"xsoe"}}]},"minimum_should_match":1},"aggs":{"weekly_momentum":{"date_histogram":{"field":"date","interval":"1w","format":"yyyy-MM-dd","min_doc_count":1},"aggs":{"cv":{"scripted_metric":{"init_script":"state.totals={}","map_script":"state.totals.add(doc.doc.volume.value*doc.volume.value)","combine_script":"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\","reduce_script":"return states[0]\n}}}}}'
```

POST cf_etf_Large Blend ETFs

http://localhost:9200/cf_etf/_search

HEADERS

```
Content-Type
application/json
BODY
```

```
{
  "size": 0,
  "query": {"match": {"morningstar_category": "Large Blend"}},
  "aggs": {
    "LIST_ETFs": {
      "terms": {"field": "symbol", "size": 14}
    }
  }
}
```

Example Request

cf etf Large Blend ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data '{"size":0,"query":{"match":{"morningstar_category":{"Large Blend"}},"aggs":{"LIST ETFs":{"terms":{"field":"symbol","size":14}}}}'
```

POST cf etf hist prirce Large Blend changes daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "eps" } },
        { "term": { "symbol": "esgu" } },
        { "term": { "symbol": "ext" } },
        { "term": { "symbol": "lglv" } },
        { "term": { "symbol": "qual" } },
        { "term": { "symbol": "qus" } },
        { "term": { "symbol": "she" } },
        { "term": { "symbol": "sphb" } },
        { "term": { "symbol": "splg" } },
        { "term": { "symbol": "sptm" } },
        { "term": { "symbol": "spyx" } },
        { "term": { "symbol": "sye" } },
        { "term": { "symbol": "ulvm" } },
        { "term": { "symbol": "usmf" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      }
    },
    "aggs": {
      "cv": {
        "scripted_metric": {
          "init_script": "state.totals=[]",
          "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
          "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
          "reduce_script": "return states[0]"
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_pricce_Large Blend_changes_daily

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
data $'\{"size":0,\\"query\\":{\\"bool\\":{\\"must\\":{\\"range\\":{\\"date\\":{\\"gte\\":\\"2018-12-26\\",\\"lte\\":\\"2019-03-25\\"}\\}}},\\"should\\":[{\\"term\\":{\\"symbol\\":\\"eps\\"}},{\\"term\\":{\\"symbol\\":\\"esgu\\"}},{\\"term\\":{\\"symbol\\":\\"ext\\"}},{\\"term\\":{\\"symbol\\":\\"lglv\\"}},{\\"term\\":{\\"symbol\\":\\"qual\\"}},{\\"term\\":{\\"symbol\\":\\"qus\\"}},{\\"term\\":{\\"symbol\\":\\"splg\\"}},{\\"term\\":{\\"symbol\\":\\"sptm\\"}},{\\"term\\":{\\"symbol\\":\\"spyx\\"}},{\\"term\\":{\\"symbol\\":\\"syel\\"}},{\\"term\\":{\\"symbol\\":\\"ulvm\\"}},{\\"term\\":{\\"symbol\\":\\"usmf\\"}}],\\"minimum_should_match\\":1}},\\"aggs\\":{\\"daily_momentum\\":{\\"date_histogram\\":{\\"field\\":\\"date\\",\\"interval\\":\\"1d\\",\\"format\\":\\"yyyy-MM-dd\\",\\"min_doc_count\\":1}},\\"aggs\\":{\\"cv\\":{\\"scripted_metric\\":{\\"init_script\\":\\"state.totals=\\",\\"map_script\\":\\"state.totals.add(doc.change.value*doc.volume.value)\\",\\"combine_script\\":\\"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\\",\\"reduce_script\\":\\"return states[0]\\"}\\}}}}\\}'
```

POST cf_etf_hist_pricce_Large Blend_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
```

```

"query":{
  "bool":{
    "must": {"range":{"date":{"gte":"2018-12-26", "lte":"2019-03-25"}}},
    "should": [
      {"term": {"symbol":"eps"}},
      {"term": {"symbol":"esgu"}},
      {"term": {"symbol":"ext"}},
      {"term": {"symbol":"lglv"}},
      {"term": {"symbol":"qual"}},
      {"term": {"symbol":"qus"}},
      {"term": {"symbol":"she"}},
      {"term": {"symbol":"sphb"}},
      {"term": {"symbol":"splg"}},
      {"term": {"symbol":"sptm"}},
      {"term": {"symbol":"spyx"}},
      {"term": {"symbol":"sye"}},
      {"term": {"symbol":"ulvm"}},
      {"term": {"symbol":"usmf"}}
    ],
    "minimum_should_match":1
  }
},
"aggs" : {
  "weekly_momentum" : {
    "date_histogram" : {
      "field" : "date",
      "interval" : "1w",
      "format" : "yyyy-MM-dd",
      "min_doc_count": 1
    },
    "aggs": {
      "cv" : {
        "scripted_metric":{
          "init_script": "state.totals=[]",
          "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
          "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
          "reduce_script": "return states[0]"
        }
      }
    }
  }
}
}
}
}

```

Example Request
cf etf hist prirce Large Blend changes weekly

```
curl --location --request POST 'http://localhost:9200/cf_etf_hist_price/_search' --header 'Content-Type: application/json' --data '{"size":0,"query":{"bool":{"must":{"range":{"date":{"gte":"2018-12-26"},"lte":"2019-03-25"}}},"should":[{"term":{"symbol":"eps"}},{term":{"symbol":"esgu"}},{term":{"symbol":"ext"}},{term":{"symbol":"lglv"}},{term":{"symbol":"qual"}},{term":{"symbol":"qus"}},{term":{"symbol":"she"}},{term":{"symbol":"sphb"}},{term":{"symbol":"splg"}},{term":{"symbol":"sptm"}},{term":{"symbol":"spyx"}},{term":{"symbol":"syex"}},{term":{"symbol":"ulvm"}},{term":{"symbol":"usmf"}}],"minimum_should_match":1},"aggs":{"weekly_momentum":{"date_histogram":{"field":"date","interval":"1w","format":"yyyy-MM-dd","min_doc_count":1},"aggs":{"cv":{"scripted_metric":{"init_script":"state.totals={}","map_script":"state.totals.add(doc.change.value*doc.volume.value)","combine_script":"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count","reduce_script":"return state[0]}}}}}}'}
```

POST cf_etf_Miscellaneous Region ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {"match": {"morningstar_category": "Miscellaneous Region"}},
  "aggs": {
    "DEM_ETFs": {
      "terms": {"field": "symbol", "size": 14}
    }
  }
}
```

Example Request

cf_etf_Miscellaneous Region ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data
$'{"size":0,"query":{"match":{"morningstar_category":"Miscellaneous Region"}},\n"aggs":{"DEM ETFs":{"terms":{"field":"symbol","size":14}}}}'
```

POST cf_etf_hist_pricce_Miscellaneous Region_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 1,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "agt" } },
        { "term": { "symbol": "ause" } },
        { "term": { "symbol": "dxge" } },
        { "term": { "symbol": "enor" } },
        { "term": { "symbol": "erus" } },
        { "term": { "symbol": "ewl" } },
        { "term": { "symbol": "fcan" } },
        { "term": { "symbol": "fgm" } },
        { "term": { "symbol": "fko" } },
        { "term": { "symbol": "fni" } },
        { "term": { "symbol": "fsz" } },
        { "term": { "symbol": "gulf" } },
        { "term": { "symbol": "heww" } },
        { "term": { "symbol": "icol" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_pricce_Miscellaneous Region_changes_daily

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data
$'{"size":1,"query":{"bool":{"must":{"range":{"date":{"gte":"2018-12-26","lte":"2019-03-25"}}},\n"should":[{"term":{"symbol":"agt"}},{\n"term":{"symbol":"ause"}},{\n"term":{"symbol":"dxge"}},{\n"term":{"symbol":"enor"}},{\n"term":{"symbol":"erus"}},{\n"term":{"symbol":"ewl"}},{\n"term":{"symbol":"fcan"}},{\n"term":{"symbol":"fgm"}},{\n"term":{"symbol":"fko"}},{\n"term":{"symbol":"fni"}},{\n"term":{"symbol":"fsz"}},{\n"term":{"symbol":"gulf"}},{\n"term":{"symbol":"heww"}},{\n"term":{"symbol":"icol"}]}],\n"minimum_should_match":1}},\n"aggs":{"daily_momentum":{"date_histogram":{"field":"date","interval":"1d","format":"yyyy-MM-dd","min_doc_count":1},\n"aggs":{"cv":{"scripted_metric":{"init_script":"state.totals=
[]","map_script":"state.totals.add(doc.change.value*doc.volume.value)","combine_script":"double total=0,
```

```
total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\", \"reduce_script\": \"return
states[0]\" } } } } }
```

POST cf_etf_hist_price_Miscellaneous Region_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "dem" } },
        { "term": { "symbol": "dgre" } },
        { "term": { "symbol": "dgs" } },
        { "term": { "symbol": "dvem" } },
        { "term": { "symbol": "ediv" } },
        { "term": { "symbol": "eemx" } },
        { "term": { "symbol": "emcg" } },
        { "term": { "symbol": "emdv" } },
        { "term": { "symbol": "esge" } },
        { "term": { "symbol": "ewx" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "weekly_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1w",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      }
    },
    "aggs": {
      "cv": {
        "scripted_metric": {
          "init_script": "state.totals=[]",
          "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
          "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
          "reduce_script": "return states[0]"
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_price_Miscellaneous Region_changes_weekly

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
data $'{"size":0,"query":{"bool":{"must":{"range":{"date":{"gte":"2018-12-26","lte":"2019-03-25"}}},"should":[{"term":{"symbol":"dem"}},{term":{"symbol":"dgre"}},{term":{"symbol":"dgs"}},{term":{"symbol":"dvem"}},{term":{"symbol":"ediv"}},{term":{"symbol":"eemx"}},{term":{"symbol":"emcg"}},{term":{"symbol":"emdv"}},{term":{"symbol":"esge"}},{term":{"symbol":"ewx"}}],"minimum_should_match":1},"aggs":{"weekly_momentum":{"date_histogram":{"field":"date","interval":"1w","format":"yyyy-MM-dd","min_doc_count":1},"aggs":{"cv":{"scripted_metric":{"init_script":"state.totals=[]","map_script":"state.totals.add(doc.change.value*doc.volume.value)","combine_script":"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count","reduce_script":"return states[0]"}}}}}}'}
```

POST cf_etf_Europe Stock ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY


```
{
  "size": 0,
  "query": {"match": {"morningstar_category": "Europe Stock"}},
  "aggs": {
    "DEM ETFs": {
      "terms": {"field": "symbol", "size": 11}
    }
  }
}
```

Example Request
cf_etf_Europe Stock ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data
$'{"size":0,"query":{"match":{"morningstar_category":"Europe Stock"}},\n"aggs":{"DEM ETFs":{"terms":{"field":"symbol",\n"size":11}}}}'
```

POST cf_etf_hist_prirce_Europe Stock_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "ddez" } },
        { "term": { "symbol": "dfe" } },
        { "term": { "symbol": "edom" } },
        { "term": { "symbol": "eudg" } },
        { "term": { "symbol": "eusc" } },
        { "term": { "symbol": "ezu" } },
        { "term": { "symbol": "feu" } },
        { "term": { "symbol": "hedj" } },
        { "term": { "symbol": "hezu" } },
        { "term": { "symbol": "ieur" } },
        { "term": { "symbol": "smez" } }
      ]
    },
    "minimum_should_match": 1
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

Example Request
cf_etf_hist_prirce_Europe Stock_changes_daily

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
data $'{"size":0,"query":{"bool":{"must":{"range":{"date":{"gte":"2018-12-26","lte":"2019-03-25"}}},\n"should":[{"term":{"symbol":"ddez"}},{\n"term":{"symbol":"dfe"}},{\n"term":{"symbol":"edom"}},{\n"term":{"symbol":"eudg"}},{\n"term":{"symbol":"eusc"}},{\n"term":{"symbol":"ezu"}},{\n"term":{"symbol":"feu"}},{\n"term":{"symbol":"hedj"}},{\n"term":{"symbol":"hezu"}},{\n"term":{"symbol":"ieur"}},{\n"term":{"symbol":"smez"}]}}}}'
```

```
{\"symbol\": \"feu\"}}, {\"term\": {\"symbol\": \"hedj\"}}, {\"term\": {\"symbol\": \"hezu\"}}, {\"term\": {\"symbol\": \"ieur\"}},
{\"term\": {\"symbol\": \"smez\"}}], \"minimum_should_match\": 1}}, {\"aggs\": {\"daily_momentum\": {\"date_histogram\":
{\"field\": \"date\", \"interval\": \"1d\", \"format\": \"yyyy-MM-dd\", \"min_doc_count\": 1}, \"aggs\": {\"cv\": {
\"scripted_metric\": { \"init_script\": \"state.totals=[]\", \"map_script\":
\"state.totals.add(doc.change.value*doc.volume.value)\", \"combine_script\": \"double total=0, total_count=0; for (t in
state.totals) {total += t; total_count += 1} return total/total_count\", \"reduce_script\": \"return states[0]\"}}}}}
```

POST cf_etf_hist_prirce_Europe Stock_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "ddez" } },
        { "term": { "symbol": "dfe" } },
        { "term": { "symbol": "edom" } },
        { "term": { "symbol": "eudg" } },
        { "term": { "symbol": "eusc" } },
        { "term": { "symbol": "ezu" } },
        { "term": { "symbol": "feu" } },
        { "term": { "symbol": "hedj" } },
        { "term": { "symbol": "hezu" } },
        { "term": { "symbol": "ieur" } },
        { "term": { "symbol": "smez" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "weekly_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1w",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_prirce_Europe Stock_changes_weekly

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
data $'{"size":0,"query":{"bool":{"must":{"range":{"date":{"gte":"2018-12-26","lte":"2019-03-
25"}}},"should":[{"term":{"symbol":"ddez"}},{term":{"symbol":"dfe"}},{term":{"symbol":"edom"}},
{"term":{"symbol":"eudg"}},{term":{"symbol":"eusc"}},{term":{"symbol":"ezu"}},{term":{"
symbol":"feu"}},{term":{"symbol":"hedj"}},{term":{"symbol":"hezu"}},{term":{"symbol":"ieur"}},
{"term":{"symbol":"smez"}}],\"minimum_should_match\":1}}, {\"aggs\": {\"weekly_momentum\": {\"date_histogram\":
{\"field\": \"date\", \"interval\": \"1w\", \"format\": \"yyyy-MM-dd\", \"min_doc_count\": 1}, \"aggs\": {\"cv\": {\"scripted_metric\":
{ \"init_script\": \"state.totals=[]\", \"map_script\": \"state.totals.add(doc.change.value*doc.volume.value)\",
\"combine_script\": \"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return
total/total_count\", \"reduce_script\": \"return states[0]\"}}}}}'
```

POST cf_etf_Technology ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": { "match": { "morningstar_category": "Technology" } },
  "aggs": {
    "DEM ETFs": {
      "terms": { "field": "symbol", "size": 11 }
    }
  }
}
```

Example Request
cf_etf_Technology ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data
$'{"size":0,"query":{"match":{"morningstar_category":"Technology"}},\n"aggs":{"DEM ETFs":{"terms":{"field":"symbol",\n"size":11}}}}'
```

POST cf_etf_hist_price_Technology_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "cibr" } },
        { "term": { "symbol": "fdn" } },
        { "term": { "symbol": "fone" } },
        { "term": { "symbol": "ftxl" } },
        { "term": { "symbol": "fxl" } },
        { "term": { "symbol": "qtec" } },
        { "term": { "symbol": "skyy" } },
        { "term": { "symbol": "tdiv" } },
        { "term": { "symbol": "xntk" } },
        { "term": { "symbol": "xsd" } },
        { "term": { "symbol": "xsw" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_price_Technology_changes_daily

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'\{"size":0,\\"query\\":{\\"bool\\":{\\"must\\":{\\"range\\":{\\"date\\":{\\"gte\\":\\"2018-12-26\\",\\"lte\\":\\"2019-03-25\\"}}},\\"should\\":[{\\"term\\":{\\"symbol\\":\\"cibr\\"}},{\\"term\\":{\\"symbol\\":\\"fdn\\"}},{\\"term\\":{\\"symbol\\":\\"fone\\"}},{\\"term\\":{\\"symbol\\":\\"ftxl\\"}},{\\"term\\":{\\"symbol\\":\\"fxl\\"}},{\\"term\\":{\\"symbol\\":\\"qtec\\"}},{\\"term\\":{\\"symbol\\":\\"skyy\\"}},{\\"term\\":{\\"symbol\\":\\"tdiv\\"}},{\\"term\\":{\\"symbol\\":\\"xntk\\"}},{\\"term\\":{\\"symbol\\":\\"xsd\\"}},{\\"term\\":{\\"symbol\\":\\"xsw\\"}}],\\"minimum_should_match\\":1}},\\"aggs\\":{\\"daily_momentum\\":{\\"date_histogram\\":{\\"field\\":\\"date\\",\\"interval\\":\\"1d\\",\\"format\\":\\"yyyy-MM-dd\\",\\"min_doc_count\\":1},\\"aggs\\":{\\"cv\\":{\\"scripted_metric\\":{\\"init_script\\":\\"state.total=\\",\\"map_script\\":\\"state.total.add(doc.change.value*doc.volume.value)\\",\\"combine_script\\":\\"double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count\\",\\"reduce_script\\":\\"return states[0]\\"}}}}}}\\'}
```

POST cf_etf_hist_price_Technology_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "cibr" } },
        { "term": { "symbol": "fdn" } },
        { "term": { "symbol": "fone" } },
        { "term": { "symbol": "ftxl" } },
        { "term": { "symbol": "fxl" } },
        { "term": { "symbol": "qtec" } },
        { "term": { "symbol": "skyy" } },
        { "term": { "symbol": "tdiv" } },
        { "term": { "symbol": "xntk" } },
        { "term": { "symbol": "xsd" } },
        { "term": { "symbol": "xsw" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "weekly_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1w",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.total=[]",
            "map_script": "state.total.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_price_Technology_changes_weekly

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'\{"size":0,\\"query\\":{\\"bool\\":{\\"must\\":{\\"range\\":{\\"date\\":{\\"gte\\":\\"2018-12-26\\",\\"lte\\":\\"2019-03-25\\"}}},\\"should\\":[{\\"term\\":{\\"symbol\\":\\"cibr\\"}},{\\"term\\":{\\"symbol\\":\\"fdn\\"}},{\\"term\\":{\\"symbol\\":\\"fone\\"}},{\\"term\\":{\\"symbol\\":\\"ftxl\\"}},{\\"term\\":{\\"symbol\\":\\"fxl\\"}},{\\"term\\":{\\"symbol\\":\\"qtec\\"}},{\\"term\\":{\\"symbol\\":\\"skyy\\"}},{\\"term\\":{\\"symbol\\":\\"tdiv\\"}},{\\"term\\":{\\"symbol\\":\\"xntk\\"}},{\\"term\\":{\\"symbol\\":\\"xsd\\"}},{\\"term\\":{\\"symbol\\":\\"xsw\\"}}],\\"minimum_should_match\\":1}},\\"aggs\\":{\\"weekly_momentum\\":{\\"date_histogram\\":{\\"field\\":\\"date\\",\\"interval\\":\\"1w\\",\\"format\\":\\"yyyy-MM-dd\\",\\"min_doc_count\\":1},\\"aggs\\":{\\"cv\\":{\\"scripted_metric\\":{\\"init_script\\":\\"state.total=\\",\\"map_script\\":\\"state.total.add(doc.change.value*doc.volume.value)\\",\\"combine_script\\":\\"double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count\\",\\"reduce_script\\":\\"return states[0]\\"}}}}}}\\'}
```

```
\state.totals.add(doc.change.value*doc.volume.value)\", \"combine_script\": \"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\", \"reduce_script\": \"return states[0]\"}]}]}]}'
```

POST cf_etf_Foreign Large Blend ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {"match": {"morningstar_category": "Foreign Large Blend"}},
  "aggs": {
    "DEM ETFs": {
      "terms": {"field": "symbol", "size": 11}
    }
  }
}
```

Example Request

cf_etf_Foreign Large Blend ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data $'{"size":0,"query":{"match":{"morningstar_category":"Foreign Large Blend"}},\"aggs\":{\"DEM ETFs\":{\"terms\":{\"field\":\"symbol\", \"size\":11}}}}'
```

POST cf_etf_hist_price_Foreign Large Blend_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "efax" } },
        { "term": { "symbol": "esgd" } },
        { "term": { "symbol": "hdmv" } },
        { "term": { "symbol": "idmo" } },
        { "term": { "symbol": "ipkw" } },
        { "term": { "symbol": "iqlt" } },
        { "term": { "symbol": "qefa" } },
        { "term": { "symbol": "rdfi" } },
        { "term": { "symbol": "spdw" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

```
}

```

Example Request

cf_etf_hist_price_Foreign Large Blend_changes_daily

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'\{"size":0,\\"query\\":{\\"bool\\":{\\"must\\":{\\"range\\":{\\"date\\":{\\"gte\\":\\"2018-12-26\\",\\"lte\\":\\"2019-03-25\\"}\\}},\\"should\\":[{\\"term\\":{\\"symbol\\":\\"efax\\"}},{\\"term\\":{\\"symbol\\":\\"esgd\\"}},{\\"term\\":{\\"symbol\\":\\"hdmv\\"}},{\\"term\\":{\\"symbol\\":\\"idmo\\"}},{\\"term\\":{\\"symbol\\":\\"ipkw\\"}},{\\"term\\":{\\"symbol\\":\\"iqlt\\"}},{\\"term\\":{\\"symbol\\":\\"qefa\\"}},{\\"term\\":{\\"symbol\\":\\"rdfi\\"}},{\\"term\\":{\\"symbol\\":\\"spdw\\"}}],\\"minimum_should_match\\":1}},\\"aggs\\":{\\"daily_momentum\\":{\\"date_histogram\\":{\\"field\\":\\"date\\",\\"interval\\":\\"1d\\",\\"format\\":\\"yyyy-MM-dd\\",\\"min_doc_count\\":1},\\"aggs\\":{\\"cv\\":{\\"scripted_metric\\":{\\"init_script\\":\\"state.totals=\\",\\"map_script\\":\\"state.totals.add(doc.change.value*doc.volume.value)\\",\\"combine_script\\":\\"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\\",\\"reduce_script\\":\\"return states[0]\\"}\\}}}}}'
```

POST cf_etf_hist_price_Foreign Large Blend_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "efax" } },
        { "term": { "symbol": "esgd" } },
        { "term": { "symbol": "hdmv" } },
        { "term": { "symbol": "idmo" } },
        { "term": { "symbol": "ipkw" } },
        { "term": { "symbol": "iqlt" } },
        { "term": { "symbol": "qefa" } },
        { "term": { "symbol": "rdfi" } },
        { "term": { "symbol": "spdw" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "weekly_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1w",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_price_Foreign Large Blend_changes_weekly

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'\{"size": 0, \\"query\\":{\\"bool\\":{\\"must\\": {\\"range\\":{\\"date\\":{\\"gte\\":\\"2018-12-26\\", \\"lte\\":\\"2019-03-25\\"}\\}}, \\"should\\": [ {\\"term\\": {\\"symbol\\":\\"efax\\"}}, {\\"term\\": {\\"symbol\\":\\"esgd\\"}}, {\\"term\\": {\\"symbol\\":\\"hdmv\\"}}, {\\"term\\": {\\"symbol\\":\\"idmo\\"}}, {\\"term\\": {\\"symbol\\":\\"ipkw\\"}}, {\\"term\\":
```

```
{\"symbol\": \"iqlt\"}}, {\"term\": {\"symbol\": \"qefa\"}}, {\"term\": {\"symbol\": \"rdfi\"}}, {\"term\": {\"symbol\": \"spdw\"}} ], \"minimum_should_match\": 1 }}, \"aggs\": { \"weekly_momentum\": { \"date_histogram\": { \"field\": \"date\", \"interval\": \"1w\", \"format\": \"yyyy-MM-dd\", \"min_doc_count\": 1 }, \"aggs\": { \"cv\": { \"scripted_metric\": { \"init_script\": \"state.totals=[]\", \"map_script\": \"state.totals.add(doc.change.value*doc.volume.value)\", \"combine_script\": \"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\", \"reduce_script\": \"return states[0]\"}}}}}}
```

POST cf_etf_China Region ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": { "match": { "morningstar_category": "China Region" } },
  "aggs": {
    "DEM ETFs": {
      "terms": { "field": "symbol" }
    }
  }
}
```

Example Request
cf_etf_China Region ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data $'{"size": 0, "query": {"match": {"morningstar_category": "China Region"}}, "aggs": { "DEM ETFs": { "terms": {"field": "symbol"}}}}'
```

POST cf_etf_hist_price_China Region_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "cnya" } },
        { "term": { "symbol": "cxse" } },
        { "term": { "symbol": "ecns" } },
        { "term": { "symbol": "ewh" } },
        { "term": { "symbol": "ewt" } },
        { "term": { "symbol": "gxc" } },
        { "term": { "symbol": "mchi" } },
        { "term": { "symbol": "wchn" } }
      ]
    },
    "minimum_should_match": 1
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

```

    }
  }
}

```

Example Request

cf_etf_hist_price_China Region_changes_daily

```

curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{"size": 0, "query": {"bool": {"must": {"range": {"date": {"gte": "2018-12-26", "lte": "2019-03-25"}}}, "should": [ {"term": {"symbol": "cnya"}}, {"term": {"symbol": "cxse"}}, {"term": {"symbol": "ecns"}}, {"term": {"symbol": "ewh"}}, {"term": {"symbol": "ewt"}}, {"term": {"symbol": "gxc"}}, {"term": {"symbol": "mchi"}}, {"term": {"symbol": "wchn"}} ], "minimum_should_match": 1 } }, "aggs": { "daily_momentum": { "date_histogram": { "field": "date", "interval": "1d", "format": "yyyy-MM-dd", "min_doc_count": 1 }, "aggs": { "cv": { "scripted_metric": { "init_script": "state.total=0", "map_script": "state.total+=doc.change.value*doc.volume.value", "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count", "reduce_script": "return states[0]"} } } } } }'

```

POST cf_etf_hist_price_China Region_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```

{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "cnya" } },
        { "term": { "symbol": "cxse" } },
        { "term": { "symbol": "ecns" } },
        { "term": { "symbol": "ewh" } },
        { "term": { "symbol": "ewt" } },
        { "term": { "symbol": "gxc" } },
        { "term": { "symbol": "mchi" } },
        { "term": { "symbol": "wchn" } }
      ]
    },
    "minimum_should_match": 1
  },
  "aggs": {
    "weekly_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1w",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.total=[]",
            "map_script": "state.total.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}

```

Example Request

cf_etf_hist_price_China Region_changes_weekly

```

curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{"size": 0, "query": {"bool": {"must": {"range": {"date": {"gte": "2018-12-26", "lte": "2019-03-25"}}}, "should": [ {"term": {"symbol": "cnya"}}, {"term": {"symbol": "cxse"}}, {"term": {"symbol": "ecns"}}, {"term": {"symbol": "ewh"}}, {"term": {"symbol": "ewt"}}, {"term": {"symbol": "gxc"}}, {"term": {"symbol": "mchi"}}, {"term": {"symbol": "wchn"}} ], "minimum_should_match": 1 } }, "aggs": { "weekly_momentum": { "date_histogram": { "field": "date", "interval": "1w", "format": "yyyy-MM-dd",

```



```
\ "min_doc_count": 1 }, \ "aggs": { \ "cv": { \ "scripted_metric": { \ "init_script": \ "state.totals=[]", \ "map_script": \ "state.totals.add(doc.change.value*doc.volume.value)", \ "combine_script": \ "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count", \ "reduce_script": \ "return states[0]" } } } } }
```

POST cf_etf_High Yield Bond ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": { "match": { "morningstar_category": "High Yield Bond" } },
  "aggs": {
    "DEM ETFs": {
      "terms": { "field": "symbol" }
    }
  }
}
```

Example Request

cf_etf_High Yield Bond ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data $'{"size": 0, \ "query": { \ "match": { \ "morningstar_category": \ "High Yield Bond" }, \ "aggs": { \ "DEM ETFs": { \ "terms": { \ "field": \ "symbol" } } } } }'
```

POST cf_etf_hist_prirce_High Yield Bond_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "faln" } },
        { "term": { "symbol": "hyls" } },
        { "term": { "symbol": "jphy" } },
        { "term": { "symbol": "sfhy" } },
        { "term": { "symbol": "shyg" } },
        { "term": { "symbol": "sjnk" } },
        { "term": { "symbol": "ushy" } },
        { "term": { "symbol": "wfhy" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

}

Example Request

cf_etf_hist_price_High Yield Bond_changes_daily

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{\
"size": 0, \
"query":{\
  "bool":{\
    "must": {\
      "range":{\
        "date":{\
          "gte":"2018-12-26", \
          "lte":"2019-03-25" \
        } \
      }, \
      "should": [ \
        {\
          "term": {\
            "symbol": "faln" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "hyls" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "jphy" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "sfhy" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "shyg" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "sjnk" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "ushy" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "wfhy" \
          } \
        } \
      ], \
      "minimum_should_match": 1 \
    }, \
    "aggs": {\
      "date_histogram": {\
        "field": "date", \
        "interval": "1d", \
        "format": "yyyy-MM-dd", \
        "min_doc_count": 1 \
      }, \
      "aggs": {\
        "cv": {\
          "scripted_metric": {\
            "init_script": "state.total=0", \
            "map_script": "state.total.add(doc.change.value*doc.volume.value)", \
            "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count", \
            "reduce_script": "return states[0]" \
          } \
        } \
      } \
    } \
  } \
}
```

POST cf_etf_hist_price_High Yield Bond_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type

application/json

BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": {
        "range": {
          "date": {
            "gte": "2018-12-26",
            "lte": "2019-03-25"
          }
        }
      },
      "should": [
        {
          "term": {
            "symbol": "faln"
          }
        },
        {
          "term": {
            "symbol": "hyls"
          }
        },
        {
          "term": {
            "symbol": "jphy"
          }
        },
        {
          "term": {
            "symbol": "sfhy"
          }
        },
        {
          "term": {
            "symbol": "shyg"
          }
        },
        {
          "term": {
            "symbol": "sjnk"
          }
        },
        {
          "term": {
            "symbol": "ushy"
          }
        },
        {
          "term": {
            "symbol": "wfhy"
          }
        }
      ],
      "minimum_should_match": 1
    },
    "aggs": {
      "weekly_momentum": {
        "date_histogram": {
          "field": "date",
          "interval": "1w",
          "format": "yyyy-MM-dd",
          "min_doc_count": 1
        },
        "aggs": {
          "cv": {
            "scripted_metric": {
              "init_script": "state.total=0",
              "map_script": "state.total.add(doc.change.value*doc.volume.value)",
              "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count",
              "reduce_script": "return states[0]"
            }
          }
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_price_High Yield Bond_changes_weekly

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{\
"size": 0, \
"query":{\
  "bool":{\
    "must": {\
      "range":{\
        "date":{\
          "gte":"2018-12-26", \
          "lte":"2019-03-25" \
        } \
      }, \
      "should": [ \
        {\
          "term": {\
            "symbol": "faln" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "hyls" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "jphy" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "sfhy" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "shyg" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "sjnk" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "ushy" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "wfhy" \
          } \
        } \
      ], \
      "minimum_should_match": 1 \
    }, \
    "aggs": {\
      "date_histogram": {\
        "field": "date", \
        "interval": "1w", \
        "format": "yyyy-MM-dd", \
        "min_doc_count": 1 \
      }, \
      "aggs": {\
        "cv": {\
          "scripted_metric": {\
            "init_script": "state.total=0", \
            "map_script": "state.total.add(doc.change.value*doc.volume.value)", \
            "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count", \
            "reduce_script": "return states[0]" \
          } \
        } \
      } \
    } \
  } \
}
```

```
\map_script\": \"state.totals.add(doc.change.value*doc.volume.value)\", \"combine_script\": \"double total=0, total_count=0;
for (t in state.totals) {total += t; total_count += 1} return total/total_count\", \"reduce_script\": \"return
states[0]\"}\"}}\"}}\"}}\"}}
```

POST cf_etf_Ultrashort Bond ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": { "match": { "morningstar_category": "Ultrashort Bond" } },
  "aggs": {
    "DEM ETFs": {
      "terms": { "field": "symbol" }
    }
  }
}
```

Example Request
cf_etf_Ultrashort Bond ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data
$'{ "size": 0, \"query\": { \"match\": { \"morningstar_category\": \"Ultrashort Bond\" } }, \"aggs\" : { \"DEM ETFs\": {
\"terms\": { \"field\": \"symbol\" } } } }
```

POST cf_etf_hist_prirce_Ultrashort Bond_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "bil" } },
        { "term": { "symbol": "flot" } },
        { "term": { "symbol": "flrn" } },
        { "term": { "symbol": "ftsm" } },
        { "term": { "symbol": "jpst" } },
        { "term": { "symbol": "near" } },
        { "term": { "symbol": "ulst" } },
        { "term": { "symbol": "vrig" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

}

Example Request

cf_etf_hist_price_Ultrashort Bond_changes_daily

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{\
"size": 0, \
"query":{\
  "bool":{\
    "must": {\
      "range":{\
        "date":{\
          "gte": "2018-12-26", \
          "lte": "2019-03-25" \
        } \
      }, \
      "should": [ \
        {\
          "term": {\
            "symbol": "bil" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "flot" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "flrn" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "ftsm" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "jpst" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "near" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "ulst" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "vrig" \
          } \
        } \
      ], \
      "minimum_should_match": 1 \
    }, \
    "aggs": {\
      "daily_momentum": {\
        "date_histogram": {\
          "field": "date", \
          "interval": "1d", \
          "format": "yyyy-MM-dd", \
          "min_doc_count": 1 \
        }, \
        "aggs": {\
          "cv": {\
            "scripted_metric": {\
              "init_script": "state.total=0", \
              "map_script": "state.total.add(doc.change.value*doc.volume.value)", \
              "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count", \
              "reduce_script": "return states[0]" \
            } \
          } \
        } \
      } \
    } \
  } \
}
```

POST cf_etf_hist_price_Ultrashort Bond_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type

application/json

BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": {
        "range": {
          "date": {
            "gte": "2018-12-26",
            "lte": "2019-03-25"
          }
        }
      },
      "should": [
        {
          "term": {
            "symbol": "bil"
          }
        },
        {
          "term": {
            "symbol": "flot"
          }
        },
        {
          "term": {
            "symbol": "flrn"
          }
        },
        {
          "term": {
            "symbol": "ftsm"
          }
        },
        {
          "term": {
            "symbol": "jpst"
          }
        },
        {
          "term": {
            "symbol": "near"
          }
        },
        {
          "term": {
            "symbol": "ulst"
          }
        },
        {
          "term": {
            "symbol": "vrig"
          }
        }
      ],
      "minimum_should_match": 1
    },
    "aggs": {
      "weekly_momentum": {
        "date_histogram": {
          "field": "date",
          "interval": "1w",
          "format": "yyyy-MM-dd",
          "min_doc_count": 1
        },
        "aggs": {
          "cv": {
            "scripted_metric": {
              "init_script": "state.total=0",
              "map_script": "state.total.add(doc.change.value*doc.volume.value)",
              "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count",
              "reduce_script": "return states[0]"
            }
          }
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_price_Ultrashort Bond_changes_weekly

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{\
"size": 0, \
"query":{\
  "bool":{\
    "must": {\
      "range":{\
        "date":{\
          "gte": "2018-12-26", \
          "lte": "2019-03-25" \
        } \
      }, \
      "should": [ \
        {\
          "term": {\
            "symbol": "bil" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "flot" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "flrn" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "ftsm" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "jpst" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "near" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "ulst" \
          } \
        }, \
        {\
          "term": {\
            "symbol": "vrig" \
          } \
        } \
      ], \
      "minimum_should_match": 1 \
    }, \
    "aggs": {\
      "weekly_momentum": {\
        "date_histogram": {\
          "field": "date", \
          "interval": "1w", \
          "format": "yyyy-MM-dd", \
          "min_doc_count": 1 \
        }, \
        "aggs": {\
          "cv": {\
            "scripted_metric": {\
              "init_script": "state.total=0", \
              "map_script": "state.total.add(doc.change.value*doc.volume.value)", \
              "combine_script": "double total=0, total_count=0; for (t in state.total) {total += t; total_count += 1} return total/total_count", \
              "reduce_script": "return states[0]" \
            } \
          } \
        } \
      } \
    } \
  } \
}
```

```
\ "map_script\": \ "state.totals.add(doc.change.value*doc.volume.value)\", \ "combine_script\": \ "double total=0, total_count=0;
for (t in state.totals) {total += t; total_count += 1} return total/total_count\", \ "reduce_script\": \ "return
states[0]\"}\}\}\}\}\}
```

POST cf_etf_Allocation--30% to 50% Equity ETFs

http://localhost:9200/cf_etf/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": { "match": { "morningstar_category": "Allocation--30% to 50% Equity" } },
  "aggs": {
    "DEM ETFs": {
      "terms": { "field": "symbol" }
    }
  }
}
```

Example Request

cf_etf_Allocation--30% to 50% Equity ETFs

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data
$'{"size": 0, "query": { "match": { "morningstar_category": "Allocation--30% to 50% Equity" } }, "aggs": {
  "DEM ETFs": { "terms": { "field": "symbol" } } } }
```

POST cf_etf_hist_price_Allocation--30% to 50% Equity_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "aok" } },
        { "term": { "symbol": "aom" } },
        { "term": { "symbol": "dwin" } },
        { "term": { "symbol": "iyld" } },
        { "term": { "symbol": "pcef" } },
        { "term": { "symbol": "psmc" } },
        { "term": { "symbol": "psmm" } }
      ]
    },
    "minimum_should_match": 1
  },
  "aggs": {
    "daily_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total
+= t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

}

Example Request

cf_etf_hist_price_Allocation--30% to 50% Equity_changes_daily

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'\{"size": 0, \\"query\\":{ \\"bool\\":{ \\"must\\": {\\"range\\":{\\\"date\\":{\\\"gte\\":\\"2018-12-26\\", \\"lte\\":\\"2019-03-25\\"}}, \\"should\\": [ {\\"term\\": {\\"symbol\\":\\"aok\\"}}, {\\"term\\": {\\"symbol\\":\\"aom\\"}}, {\\"term\\": {\\"symbol\\":\\"dwin\\"}}, {\\"term\\": {\\"symbol\\":\\"iyld\\"}}, {\\"term\\": {\\"symbol\\":\\"pcef\\"}}, {\\"term\\": {\\"symbol\\":\\"psmc\\"}}, {\\"term\\": {\\"symbol\\":\\"psmm\\"}} ], \\"minimum_should_match\\":1 } }, \\"aggs\\": { \\"daily_momentum\\": { \\"field\\": \\"date\\", \\"interval\\": \\"1d\\", \\"format\\": \\"yyyy-MM-dd\\", \\"min_doc_count\\": 1 }, \\"aggs\\": { \\"cv\\": { \\"scripted_metric\\":{ \\"init_script\\": \\"state.totals=[]\\", \\"map_script\\": \\"state.totals.add(doc.change.value*doc.volume.value)\\", \\"combine_script\\": \\"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\\", \\"reduce_script\\": \\"return states[0]\\"} }}} }'
```

POST cf_etf_hist_price_Allocation--30% to 50% Equity_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type
application/json
BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
      "should": [
        { "term": { "symbol": "aok" } },
        { "term": { "symbol": "aom" } },
        { "term": { "symbol": "dwin" } },
        { "term": { "symbol": "iyld" } },
        { "term": { "symbol": "pcef" } },
        { "term": { "symbol": "psmc" } },
        { "term": { "symbol": "psmm" } }
      ],
      "minimum_should_match": 1
    }
  },
  "aggs": {
    "weekly_momentum": {
      "date_histogram": {
        "field": "date",
        "interval": "1w",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "cv": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add(doc.change.value*doc.volume.value)",
            "combine_script": "double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count",
            "reduce_script": "return states[0]"
          }
        }
      }
    }
  }
}
```

Example Request

cf_etf_hist_price_Allocation--30% to 50% Equity_changes_weekly

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'\{"size": 0, \\"query\\":{ \\"bool\\":{ \\"must\\": {\\"range\\":{\\\"date\\":{\\\"gte\\":\\"2018-12-26\\", \\"lte\\":\\"2019-03-25\\"}}, \\"should\\": [ {\\"term\\": {\\"symbol\\":\\"aok\\"}}, {\\"term\\": {\\"symbol\\":\\"aom\\"}}, {\\"term\\": {\\"symbol\\":\\"dwin\\"}}, {\\"term\\": {\\"symbol\\":\\"iyld\\"}}, {\\"term\\": {\\"symbol\\":\\"pcef\\"}}, {\\"term\\": {\\"symbol\\":\\"psmc\\"}}, {\\"term\\": {\\"symbol\\":\\"psmm\\"}} ], \\"minimum_should_match\\":1 } }, \\"aggs\\": { \\"weekly_momentum\\": { \\"date_histogram\\": { \\"field\\": \\"date\\", \\"interval\\": \\"1w\\", \\"format\\": \\"yyyy-MM-dd\\", \\"min_doc_count\\": 1 }, \\"aggs\\": { \\"cv\\": { \\"scripted_metric\\":{ \\"init_script\\": \\"state.totals=[]\\", \\"map_script\\": \\"state.totals.add(doc.change.value*doc.volume.value)\\", \\"combine_script\\": \\"double total=0, total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\\", \\"reduce_script\\": \\"return states[0]\\"} }}} }'
```

POST cf_etf_hist_prirce_Bollinger_band_dem

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

Content-Type

application/json

BODY

```
{
  "size": 0,
  "query": {
    "bool": {
      "must": [
        { "range": { "date": { "gte": "2018-12-26", "lte": "2019-03-25" } } },
        { "term": { "symbol": "rfem" } }
      ]
    }
  },
  "aggs": {
    "Bollinger_band": {
      "date_histogram": {
        "field": "date",
        "interval": "1d",
        "format": "yyyy-MM-dd",
        "min_doc_count": 1
      },
      "aggs": {
        "tp": {
          "scripted_metric": {
            "init_script": "state.totals=[]",
            "map_script": "state.totals.add((doc.high.value+doc.low.value+doc.close.value)/3)",
            "combine_script": "double total=0; for (t in state.totals) {total += t} return total",
            "reduce_script": "return states[0]"
          }
        },
        "20_trading_days_moving_avg": {
          "moving_avg": { "model": "simple", "window": 20, "buckets_path": "tp.value" }
        },
        "20_trading_days_stdDev": {
          "moving_fn": { "script": "MovingFunctions.stdDev(values, MovingFunctions.unweightedAvg(values))" }
        }
      },
      "window": 20, "buckets_path": "tp.value"
    },
    "BBU": {
      "bucket_script": {
        "buckets_path": {
          "SMA": "20_trading_days_moving_avg",
          "StdDev": "20_trading_days_stdDev"
        },
        "script": "params.SMA + 2 * params.StdDev"
      }
    },
    "BBL": {
      "bucket_script": {
        "buckets_path": {
          "SMA": "20_trading_days_moving_avg",
          "StdDev": "20_trading_days_stdDev"
        },
        "script": "params.SMA - 2 * params.StdDev"
      }
    }
  }
}
```

Example Request

cf_etf_hist_prirce_Bollinger_band_dem

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{"size":0,"query":{"bool":{"must":[{"range":{"date":{"gte":"2018-12-26","lte":"2019-03-25"}}},{ "term":{"symbol":"rfem"}}]}}, "aggs":{"Bollinger_band":{"date_histogram":{"field":"date","interval":"1d","format":"yyyy-MM-dd","min_doc_count": 1}, "aggs":{"tp":{"scripted_metric":{"init_script":"state.totals=[]","map_script":"state.totals.add((doc.high.value+doc.low.value+doc.close.value)/3)","combine_script":"double total=0; for (t in state.totals) {total += t} return total","reduce_script":"return states[0]"}}, "20_trading_days_moving_avg":{"moving_avg":{"model":"simple","window":20,"buckets_path":"tp.value"}}, "20_trading_days_stdDev":{"moving_fn":{"script":"MovingFunctions.stdDev(values,MovingFunctions.unweightedAvg(values))"},"window":20,"buckets_path":"tp.value"}}, "BBU":{"bucket_script":{"buckets_path":{"SMA":"20_trading_days_moving_avg","StdDev":"20_trading_days_stdDev"},"script":"params.SMA + 2 * params.StdDev"}}, "BBL":{"bucket_script":{"buckets_path":{"SMA":"20_trading_days_moving_avg","StdDev":"20_trading_days_stdDev"},"script":"params.SMA - 2 * params.StdDev"}}}}}'
```