Chapter 10

```
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\":{\"qet_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\"}},\"aggs\":{\"LIST_ETFs\": {\"terms\":{\"field\":\"symbol\",\"size\":16}}}'
POST cf_etf_hist_prirce_Diversified_Emerging_Mkts_changes_2018_12_26
http://localhost:9200/cf_etf_hist_price/_search
HEADERS
Content-Type
application/json
BÔDY
{
        "size": 16,
        "query":{
                         "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."
                                                                                        "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_Diversified_Emerging_Mkts_changes_2018_12_26
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
26\"}}},\"should\":[{\"term\":{\"symbol\":\"dgs\"}}, {\"term\":{\"symbol\":\"dgre\"}}, {\"term\":{\"symbol\":\"dgs\"}}, {\"term\":{\"symbol\":\"ediv\"}}, {\"term\":\"emx\"}}, {\"term\":\"emx\"}
{\"symbol\":\"emcg\"}},{\"term\":{\"symbol\":\"ewx\"}},
{\"term\":{\"symbol\":\"pxh\"}},{\"term\":\"qemm\"}},{\"term\":\"symbol\":\"rfem\"}},{\"term\":\"symbol\":\"rfem\"}},\"term\":\"symbol\":\"aevm\":\"symbol\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\":\"aevm\"
{\"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 of etf hist prirce 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" : {
         'daily_momentum" : {
             "date histogram" : {
                 "field" : "date"
                 "interval" : "1d",
                 "format" : "yyyy-MM-dd",
                 "min_doc_count": 1
            },
                       "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_Diversified_Emerging_Mkts_changes_daily
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
{\"symbol\":\"spem\"}},{\"term\":{\"symbol\":\"uevm\"}},{\"term\"
{\"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)\",
\color{bine} 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_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" : "lw",
                                "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_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\":{\"must\":{\"range\":{\"date\":{\"gte\":\"2018-12-26\",\"lte\":\"2019-03-
25\"}}},\"should\":[{\"term\":{\"symbol\":\"dgre\"}},{\"term\":{\"symbol\":\"dgs\"}},
{\"term\":{\"symbol\":\"eemx\"}},{\"term\":{\"symbol\":\"eemx\"}},{\"term\":{\"symbol\":\"ewx\"}},
{\"term\":{\"symbol\":\"pxh\"}},{\"term\":{\"symbol\":\"rfem\"}},{\"term\":
{\"symbol\":\"symbol\":\"rfem\"}},{\"term\":
\verb|\scale| totals.add(doc.change.value*doc.volume.value)| ``, \verb|\scale| total=0, total_count=0; for (t in the count-of th
state.totals) {total += t; total_count += 1} return total/total_count\", \"reduce_script\": \"return states[0]\"}}}}}
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/ison
BÔDY
{
        "size": 0,
        "query":{
               "bool":{
    "must": {"range":{"date":{"gte":"2018-12-26", "lte":"2019-03-25"}}},
                                {"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
             },
                        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_daily
{\"term\":{\"symbol\":\"lqlv\"}},{\"term\":{\"symbol\":\"qua\\"}},{\"term\":{\"symbol\":\"qus\"}},f\"term\":
{\"symbol\":\"she\"}},{\"term\":{\"symbol\":\"sphb\"}},{\"term\":\"symbol\":\"splg\"}},{\"term\":\"symbol\":\"sptm\"}},
{\"term\":\"symbol\":\"ulvm\"}},\"term\":\"symbol\":\"ulvm\"}},\"term\":\"ulvm\"}},\"term\":\"ulvm\"}],\"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 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
        ""
                                                                                                                "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\":{\"date\":{\"gte\":\"2018-12-26\",\"lte\":\"2019-03-
25^{*}, ``should'':[{`'term'':{`'symbol'':\"eps\"}}, {`'term'':{\"symbol'':\"ext\"}}, {`'term'':{\"symbol'':\"ext\"}}, {`'term'':{\"symbol'':\"ext\"}}, {`'term'':{\"symbol'':\"ext\"}}, {`'term'':{\"symbol'':\"ext\"}}, {`'term'':{\"symbol'':\"ext\"}}, {`'term'':{\"symbol'':\"ext\"}}, {`'term'':{\"symbol'':\"ext\"}}, {\"term'':{\"symbol'':\"ext\"}}, {\"term'':\"ext\"}}, {\"term'':\"ext\"}
{\"term\":{\"symbol\".\"cys\\}},{\"term\":{\"symbol\".\"cys\\}},{\"term\":{\"symbol\":\"qus\\}},{\"term\":{\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"symbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usymbol\":\"usym
{\"field\":\"date\",\"interval\":\"lw\",\"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 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\"}},\"aggs\":{\"DEM_ETFs\":{\"terms\": {\"field\":\"symbol\",\"size\":14}}}}' POST cf_etf_hist_prirce_Miscellaneous Region_changes_daily http://localhost:9200/cf_etf_hist_price/_search **HEADERS** Content-Type application/ison BÔDY { "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 }, 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_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\":{\"date\":{\"gte\":\"2018-12-26\",\"lte\":\"2019-03-25\"}}},\"should\":[{\"term\":{\"symbol\":\"agt\"}},{\"term\":{\"symbol\":\"ause\"}}, {\"term\":{\"symbol\":\"axge\"}}, {\"term\":{\"symbol\":\"enor\"}},{\"term\":{\"symbol\":\"ewl\"}},{\"term\": {\"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\":

[]\",\"map_script\":\"state.totals.add(doc.change.value*doc.volume.value)\",\"combine_script\":\"double total=0,

{\"init_script\":\"state.totals=

 $total_count=0; for (t in state.totals) {total += t; total_count += 1} return total/total_count\", \"reduce_script\": \"return states[0]\" }}}}'$

POST cf_etf_hist_prirce_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
            },
                       "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_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\":\\"range\":\\"age\":\\"gte\":\"2018-12-26\",\"lte\":\"2019-03-
25\"}}},\"should\":[{\"term\":\\"symbol\":\"dem\"}},\\"term\":\\"symbol\":\"dgre\"}},\\"term\":\\"symbol\":\"dgre\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}},\\"term\":\\"symbol\":\"emx\"}\\"symbol\":\"emx\"\";\\"symbol\":\"emx\"\";\\"symbol\":\"emx\"\";\\"symbol\":\"emx\"\";\\"state_histogram\":\\"histogram\":\\"histogram\":\\"yyyy-MM-dd\",\"min_doc_count\":1},\\"aggs\":\\"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

```
{
                         "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
''' = 10, \ggs : {\ggs}: {\g
{\"field\":\"symbol\",\"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":{
                                                                          '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" : "ld",
                                                       "format" : "yyyy-MM-dd",
                                                       "min_doc_count": 1
                                         },
                                                                        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\":{\"must\":{\"range\":{\"date\":{\"gte\":\"2018-12-26\",\"lte\":\"2019-03-25\"}}},\"should\":[{\"term\":{\"symbol\":\"ddez\"}},{\"term\":{\"symbol\":\"edom\"}},{\"term\":{\"symbol\":\"eze\"}},{\"term\":\"exe\"}},{\"term\":\"symbol\":\"exe\"}},{\"term\":\"exe\"}},\"term\":\"exe\"},\"term\":\"exe\"},\"term\":\"exe\"},\"term\":\"exe\"},\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"\exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\";\"exe\"\"exe\"\";\"exe\"\";\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"exe\"\"ex
```

```
{\"symbol\":\"feu\"}},{\"term\":{\"symbol\":\"hedj\"}},{\"term\":{\"symbol\":\"hezu\"}},{\"term\":{\"symbol\":\"ieur\"}},
{\"term\":\"symbol\":\"hezu\"}},\"daily_momentum\":\"\date_histogram\":
{\"field\":\"date\",\"interval\":\"yyyy-MM-dd\",\"min_doc_count\":1},\"aggs\":\"cv\":\"
\"scripted_metric\":\"\"init_script\":\"state.totals=[]\",\"map_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":{
    """ + script
                                                   "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\":\{\"range\":\{\"adte\":\\"z018-12-26\\,\"lte\":\\"2019-03-
25\\"}}},\"should\":[\{\"term\":\{\"symbol\\":\"ddez\\"}},\{\"term\\":\\"symbol\\":\"edom\\"}},
\{\"term\\":\{\"symbol\\":\"edom\\"}},\{\"term\\":\\"symbol\\":\"eusc\\"}},\{\"term\\":\\"symbol\\":\"eusc\\"}},\{\"term\\":\\"symbol\\":\"eusc\\"}},\{\"term\\":\\"symbol\\":\"eusc\\"}},\{\"term\\":\\"symbol\\":\"ieur\\"}},\{\"term\\":\\"symbol\\":\\"ieur\\";\\"symbol\\":\"ieur\\"}},\{\"term\\":\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"symbol\\":\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieur\\";\\"ieu
```

POST cf_etf_Technology_ETFs

http://localhost:9200/cf_etf/_search

```
HEADERS
```

}

```
Content-Type
application/json
BODY
{
        "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\":{\"morningstar_category\":\"Technology\"}},\"aggs\":{\"DEM_ETFs\":{\"terms\": {\"field\":\"symbol\",\"size\":11}}}}'
POST cf_etf_hist_prirce_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"}}},
                                   {"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
              },
                                            "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_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\":\"fone\"}},{\"term\":{\"symbol\":\"fdn\"}},{\"term\":{\"symbol\":\"fone\"}},
{\"term\":{\"symbol\":\"fxl\"}},{\"term\":{\"symbol\":\"atex\"}},{\"term\":
{\"symbol\":\"skyy\"}},{\"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\":\"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_Technology_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

```
HEADERS
```

```
Content-Type
application/json
BODY
{
       "size": 0,
       "query":{
                     "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
           },
                     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_Technology_changes_weekly
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
```

{\"symbol\":\"skyy\"}},{\"term\":{\"symbol\":\"tdiv\"}},{\"term\":{\"symbol\":\"xntk\"}},{\"term\":{\"symbol\":\"xsd\"}},

{\"field\":\"date\",\"interval\":\"1w\",\"format\":\"yyyy-MM-dd\",\"min_doc_count\":1},\"aggs\":{\"cv\":{\"scripted_metric\":{\"init_script\":\"state.totals=[]\",\"map_script\":

POST cf etf Foreign Large Blend ETFs

http://localhost:9200/cf_etf/_search

```
HEADERS
```

Example Request cf_etf_Foreign Large Blend_ETFs

POST cf_etf_hist_prirce_Foreign Large Blend_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

```
Content-Type
application/json
BODY
{
        "size": 0,
        "query":{
                          "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" : "ld",
                   "format" : "yyyy-MM-dd",
                   "min doc count": 1
             },
                          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_Foreign Large Blend_changes_daily curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" -- $\label{thm:prop:state} $$ data ''_size'':0,'"query'':{\"must\":{\"range\":{\"gte\":\"2018-12-26\",\"lte\":\"2019-03-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2019-03-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2019-03-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2019-03-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2019-03-12-26\",\"lte\":\"2019-03-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2019-03-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"2018-12-26\",\"lte\":\"201$ 25\"}}},\"should\":[{\"term\":{\"symbol\":\"efax\"}},{\"term\":{\"symbol\":\"hdmv\"}},
{\"term\":{\"symbol\":\"iqlt\"}},{\"term\": {\"symbol\":\"qefa\"}},{\"term\":{\"symbol\":\"rdfi\"}},{\"term\" {\"field\":\"date\",\"interval\":\"1d\",\"format\":\"yyyy-MM-dd\",\"min_doc_count\":1},\"aggs\":{\"cv\":{\"scripted_metric\":{\"init_script\":\"state.totals=[]\",\"map_script\":\"double total=0, total_count=0; for (t in state.totals.add(doc.change.value*doc.volume.value)\",\"combine_script\":\"double total=0, total_count=0; for (t in state.totals.add(doc.change.value*doc.volume.value)\",\"double total=0, total_count=0; for (t in state.totals.add(doc.change.value*doc.volume.value*doc.volume.v state.totals) {total += t; total_count += 1} return total/total_count\", \"reduce_script\": \"return states[0]\"}}}}} POST cf_etf_hist_prirce_Foreign Large Blend_changes_weekly http://localhost:9200/cf_etf_hist_price/_search HEADERS Content-Type application/ison 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": { 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_Foreign Large Blend_changes_weekly curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --

 $file: ///Users/wai-takwong/Desktop/ES7/git/PacktPublishing/Mastering-Elasticsearch-7.0/Chapter 10/exploratory_data_analysis.html$

 $25^{}, ``should'': [{`"term\": {\"symbol\":\"efax\"}, {\"term\": {\"symbol\":\"esgd\"}}, {\"term\": {\"symbol\":\"ipkw\"}}, {\"term\":\"ipkw\"}}, {\"term\":\"ipkw\"}}$

data \$'{\"size\": 0, \"query\":{ \"bool\":{ \"range\":{\"date\":{\"gte\":\"2018-12-26\", \"lte\":\"2019-03-

```
{\"symbol\":\"iqlt\"}}, {\"term\": {\"symbol\":\"qefa\"}}, {\"term\": {\"symbol\":\"rdfi\"}}, {\"term\":
{\"symbol\":\"spdw\"}}], \"minimum_should_match\":1}}, \"aggs\": { \"weekly_momentum\": { \"date_histogram\": {
\"field\": \"date\", \"interval\": \"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
```

Example Request cf_etf_China Region_ETFs

POST cf_etf_hist_prirce_China Region_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

```
Content-Type
application/ison
BODY
{
        "size": 0,
         query":{
                 "bool":{
    "must": {"range":{"date":{"gte":"2018-12-26", "lte":"2019-03-25"}}},
                                  {"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": "ld",
"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_China Region_changes_daily
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --
25\"}}}, \"should\": [ {\"term\": {\"symbol\":\"cnya\"}}, {\"term\": {\"symbol\":\"exse\"}}, {\"term\": {\"symbol\":\"ext\"}}, {\"term\": {\"symbol\":\"ext\"}}, {\"term\": {\"symbol\":\"gxc\"}},
{\"term\": {\"symbol\\":\"mchi\\"}}, {\"term\": {\"symbol\\":\"wchn\\"}}], \"minimum_should_match\\":1}}, \"aggs\\": {\"date\momentum\\": {\"date\momentum\\": {\"date\momentum\\": {\"script\\":\"\"interval\\":\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\\":\"state.totals=[]\", \"map_script\":\"state.totals=[]\", \"
\"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_China Region_changes_weekly
http://localhost:9200/cf_etf_hist_price/_search
HEADERS
Content-Type
application/json
BÔDY
{
              "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
                       },
                                                                         "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_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\":{ \"range\":{\"date\":{\"gte\":\"2018-12-26\", \"lte\":\"2019-03-25\"}}}, \"should\": [ {\"term\": {\"symbol\":\"cxse\"}}, {\"term\":
{\"symbol\":\"ecns\"}}, {\"term\": {\"symbol\":\"ewh\"}}, {\"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
```

Example Request cf_etf_High Yield Bond_ETFs

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"}}},
                                 {"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
             },
                         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_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\":{ \"range\":{\"date\":{\"gte\":\"2018-12-26\", \"lte\":\"2019-0325\"}}}, \"should\": [{\"term\": {\"symbol\":\"faln\"}}, {\"term\": {\"symbol\":\"shyl\"}}, {\"term\":
{\"symbol\":\"jphy\"}}, {\"term\": {\"symbol\":\"shyl\"}}, {\"term\":
{\"symbol\":\"sjnk\"}}, {\"term\": {\"symbol\":\"shyl\"}}, {\"term\":
{\"symbol\":\"sjnk\"}}, {\"date_n\": {\"symbol\":\"ushy\"}}, {\"term\":
\"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_High Yield Bond_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

```
HEADERS
```

```
Content-Type
application/ison
BÔDY
{
        "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.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_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\":\"shy\"}}, {\"term\":
{\"symbol\":\"sjnk\"}}, {\"term\": {\"symbol\":\"wfhy\"}}], \"minimum_should_match\":1 }
}, \"aggs\": { \"weekly_momentum\": { \"date_histogram\": { \"field\": \"date\", \"interval\": \"sript\": \"state.totals=[]\",
\"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_Ultrashort Bond_ETFs

http://localhost:9200/cf_etf/_search

```
HEADERS
```

Example Request cf_etf_Ultrashort Bond_ETFs

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"}}},
                                   {"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" : "ld",
                   "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_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\":\"flot\"}}, {\"term\": {\"symbol\":\"flot\"}}, {\"term\":
{\"symbol\":\"interm\": {\"symbol\":\"interm\":
{\"symbol\":\"range\":\"vrig\"}}], \"minimum_should_match\":1}
}, \"aggs\": { \"daily_momentum\": { \"date_histogram\": { \"field\": \"date\", \"interval\": \"interval\": \"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_Ultrashort Bond_changes_weekly

http://localhost:9200/cf_etf_hist_price/_search

```
HEADERS
```

```
Content-Type
application/ison
BÔDY
{
        "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.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_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\":{ \"range\":{\"date\":{\"gte\":\"2018-12-26\", \"lte\":\"2019-03-
25\"}}}, \"should\": [ {\"term\": {\"symbol\":\"bil\"}}, {\"term\": {\"symbol\":\"flot\"}}, {\"term\":
{\"symbol\":\"flot\"}}, {\"term\": {\"symbol\":\"jpst\"}}, {\"term\":
{\"symbol\":\"near\"}}, {\"term\": {\"symbol\":\"rig\"}}], \"minimum_should_match\":1 }
}, \"aggs\": { \"weekly_momentum\": { \"date_histogram\": { \"field\": \"date\", \"interval\": \"1\"\, \"format\":
\"yyyyy-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_Allocation--30% to 50% Equity_ETFs

```
http://localhost:9200/cf_etf/_search
```

```
HEADERS
```

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 $''' = 0, \query'': \query$

POST cf_etf_hist_prirce_Allocation--30% to 50% Equity_changes_daily

http://localhost:9200/cf_etf_hist_price/_search

HEADERS

```
Content-Type
application/json
BÔDY
{
         'size": 0.
         'query":{
                "bool":{
    "must": {"range":{"date":{"gte":"2018-12-26", "lte":"2019-03-25"}}},
                                  {"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": "ld",
"format": "yyyy-MM-dd",
                   "min_doc_count": 1
              },
                          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]"
                                  }
```

```
//6/201
}
```

Example Request cf_etf_hist_prirce_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\":\"2019-0325\"}}}, \"should\": [{\"term\": {\"symbol\":\"aok\"}}, {\"term\": {\"symbol\":\"aom\"}}, {\"term\": {\"symbol\":\"dwin\"}},
{\"term\": {\"symbol\":\"iyld\"}}, {\"term\": {\"symbol\":\"poef\"}}, {\"term\": {\"symbol\":\"psmc\"}}, {\"term\":
{\"symbol\":\"psmc\"}}, {\"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_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"}}},
                                {"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" : "lw",
                  "format" : "yyyy-MM-dd",
                  "min_doc_count": 1
             },
                        "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_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\":\"2019-0325\"}}}, \"should\": [{\"term\": {\"symbol\":\"aok\"}}, {\"term\": {\"symbol\":\"aom\"}}, {\"term\": {\"symbol\":\"gmo\"}}, {\"term\": {\"symbol\":\"psmc\"}}, {\"term\": {\"symbol\":\"psmc\"}}, {\"term\": {\"symbol\":\"psmc\"}}, {\"term\": {\"symbol\":\"psmc\"}}, {\"term\": {\"date_histogram\": {\"field\": \"date\", \"interval\": \"1\m\", \"format\": \"yyyy-MM-dd\", \"min_doc_count\": 1 }, \"aggs\": {\"cv\": {\"scripted_metric\":{\"init_script\": \"state.totals=[]\", \"map_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
HÉADERS
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": {
                                     "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"}}}}}
```