

# Chapter8

## GET IEX\_ACWF\_chart\_3m

https://api.iextrading.com/1.0/stock/ACWF/chart/3m

Example Request  
IEX\_ACWF\_chart\_3m

```
curl --location --request GET "https://api.iextrading.com/1.0/stock/ACWF/chart/3m"
```

## GET cf\_etf\_historical\_prices\_mapping

http://localhost:9200/cf\_etf\_hist\_price/

Example Request  
cf\_etf\_historical\_prices\_mapping

```
curl --location --request GET "http://localhost:9200/cf_etf_hist_price/"
```

## GET cf\_etf\_historical\_prices\_document\_count

http://localhost:9200/cf\_etf\_hist\_price/\_count

Example Request  
cf\_etf\_historical\_prices\_document\_count

```
curl --location --request GET "http://localhost:9200/cf_etf_hist_price/_count"
```

## POST cf\_etf\_hist\_price\_dcoument\_search\_all

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size":61,
  "query":{"match":{"symbol":"ACWF"}}
}
```

Example Request  
cf\_etf\_hist\_price\_dcoument\_search\_all

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{
  \"size\":61,
  \"query\":{\"match\":{\"symbol\":\"ACWF\"}}
}'
```

## POST cf\_etf\_hist\_price\_matrix\_stats

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "statistics": {
      "matrix_stats": {
        "fields": ["volume", "changePercent"]
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_matrix\_stats

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query": { "match": { "symbol": "ACWF"}}, "aggs": { "statistics": { "matrix_stats": { "fields": ["volume", "changePercent"] } } } }'
```

## GET count\_cf\_etf\_hist\_price\_index\_dcoument

http://localhost:9200/cf\_etf\_hist\_price/\_count

Example Request

count\_cf\_etf\_hist\_price\_index\_dcoument

```
curl --location --request GET "http://localhost:9200/cf_etf_hist_price/_count"
```

## DEL delete\_cf\_etf\_hist\_price\_index

http://localhost:9200/cf\_etf\_hist\_price/

Example Request

delete\_cf\_etf\_hist\_price\_index

```
curl --location --request DELETE "http://localhost:9200/cf_etf_hist_price/"
```

## POST cf\_etf\_hist\_price\_avg\_acwf\_change

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
Accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {"acwf_avg_change_price": {"avg": { "field": "change" }}}
}
```

Example Request

cf\_etf\_hist\_price\_avg\_acwf\_change

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "Accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},\n"aggs":{"acwf_avg_change_price":{"avg":{"field":"change"}}}}'
```

## POST cf\_etf\_hist\_price\_weight\_avg\_acwf\_change

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "acwf_avg_change_with_vol_weight": {
      "weighted_avg": {
        "value": {"field": "change"}, "weight": {"field": "volume"}
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_weight\_avg\_acwf\_change

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query": { "match": { "symbol": "ACWF"}}, "aggs": { "acwf_avg_change_with_vol_weight": { "weighted_avg": { "value": {"field": "change"}, "weight": {"field": "volume"} } } } }'
```

POST cf\_etf\_morningstar\_categories\_cardinality

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "aggs": {
    "number_of_morningstar_category": {
      "cardinality": {"field": "morningstar_category"}
    }
  }
}
```

Example Request  
cf\_etf\_morningstart\_categories\_cardinality

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

POST cf\_etf\_morningstar\_categories\_value\_count

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "aggs": {
    "num_of_etfs_have_market_cap": {
      "value_count": {"field": "market_cap"}
    }
  }
}
```

Example Request  
cf\_etf\_market\_cap\_value\_count

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --header "accept: application/json" --data '${"size": 0, "aggs": { "num_of_etfs_have_market_cap": { "value_count": {"field": "market_cap"} } } }'
```

POST cf\_etf\_dividend\_acwf\_amount\_sum

http://localhost:9200/cf\_etf\_dividend\_denormalize/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "sum_amount": {
      "sum": {"field": "amount"}
    }
  }
}
```

Example Request  
cf\_etf\_dividend\_acwf\_amount\_sum

```
curl --location --request POST "http://localhost:9200/cf_etf_dividend_denormalize/_search" --header "Content-Type: application/json" --data '${ "size": 0, "query": { "match": { "symbol": "ACWF"}}, "aggs": { "sum_amount": { "sum": {"field": "amount"} } } }'
```

POST cf\_etf\_hist\_price\_acwf\_minimum\_open\_price

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "minimum_open_price": {
      "min": {"field": "open"}
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_minimum\_open\_price

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"query\": { \"match\": { \"symbol\": \"ACWF\"}}, \"aggs\": { \"minimum_open_price\": { \"min\": {\"field\": \"open\"} } } }'
```

POST cf\_etf\_hist\_price\_acwf\_maximum\_open\_price

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "maximum_open_price": {
      "max": {"field": "open"}
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_maximum\_open\_price

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"query\": { \"match\": { \"symbol\": \"ACWF\"}}, \"aggs\": { \"maximum_open_price\": { \"max\": {\"field\": \"open\"} } } }'
```

POST cf\_etf\_hist\_price\_acwf\_stats\_open\_price

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "stats_open_price": {
      "stats": {"field": "open"}
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_stats\_open\_price

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query": { "match": { "symbol": "ACWF"}}, "aggs": { "stats_open_price": { "stats": { "field": "open" } } } }'
```

POST cf\_etf\_hist\_price\_acwf\_extended\_stats\_open\_price

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "extend_stats_open_price": {
      "extended_stats": { "field": "open" }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_extended\_stats\_open\_price

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query": { "match": { "symbol": "ACWF"}}, "aggs": { "extend_stats_open_price": { "extended_stats": { "field": "open" } } } }'
```

POST cf\_etf\_top\_hit\_morningstar\_category

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "aggs": {
    "category_top_hits": {
      "terms": {
        "field": "morningstar_category",
        "size": 5
      },
      "aggs": {
        "category_top_hits": {
          "top_hits": {}
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_top\_hit\_morningstar\_category

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "aggs": { "category_top_hits": { "terms": { "field": "morningstar_category", "size": 5 }, "aggs": { "category_top_hits": { "top_hits": {} } } } } }'
```

POST cf\_etf\_hist\_price\_percentiles\_open\_price

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json

BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "open_price_percentiles": {
      "percentiles": {"field":"open"}
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_percentiles\_open\_price

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"query\": { \"match\": { \"symbol\": \"ACWF\"}}, \"aggs\": { \"open_price_percentiles\": { \"percentiles\": {\"field\":\"open\"} } } }'
```

POST cf\_etf\_hist\_price\_percentile\_rank\_open\_price

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "open_price_percentile_rank": {
      "percentile_ranks": {"field":"open", "values":28.5}
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_percentile\_rank\_open\_price

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"query\": { \"match\": { \"symbol\": \"ACWF\"}}, \"aggs\": { \"open_price_percentile_rank\": { \"percentile_ranks\": {\"field\":\"open\", \"values\":28.5} } } }'
```

POST cf\_etf\_hist\_price\_mad\_acwf\_percetChange

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "mad_change_percent": {
      "median_absolute_deviation": {"field":"changePercent" }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_mad\_acwf\_percetChange

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\":0, \"query\":{ \"match\":{ \"symbol\": \"ACWF\"}}, \"aggs\":{ \"mad_change_percent\": { \"median_absolute_deviation\":{ \"field\": \"changePercent\" } } } }'
```

POST cf\_etf\_hist\_price\_scripted\_metric

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "highest_cp_cot_ratio": {
      "scripted_metric": {
        "init_script": "state.price_diff = new ArrayList()",
        "map_script": "double value = doc.changeOverTime.value==0 ? 0 : doc.changePercent.value/(doc.changeOverTime.value*100); state.price_diff.add(value)",
        "combine_script": "return Collections.max(state.price_diff)",
        "reduce_script": "return Collections.max(states)"
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_scripted\_metric

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query": { "match": { "symbol": "ACWF"}}, "aggs": { "highest_cp_cot_ratio": { "scripted_metric": { "init_script": "state.price_diff = new ArrayList()", "map_script": "double value = doc.changeOverTime.value==0 ? 0 : doc.changePercent.value/(doc.changeOverTime.value*100); state.price_diff.add(value)", "combine_script": "return Collections.max(state.price_diff)", "reduce_script": "return Collections.max(states)" } } } }'
```

POST cf\_etf\_hist\_price\_acwf\_histogram

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs": {
    "acwf_histogram": {
      "histogram": {
        "field": "open",
        "interval": 1,
        "extended_bounds": { "min":24, "max":30}
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_histogram

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query": { "match": { "symbol": "ACWF"}}, "aggs": { "acwf_histogram": { "histogram": { "field": "open", "interval": 1, "extended_bounds": { "min":24, "max":30} } } } }'
```

POST cf\_etf\_hist\_price\_acwf\_date\_histogram

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs":{
    "monthly_trading_days": {
```



```
      "date_histogram":{
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_date\_histogram

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"query\": { \"match\": { \"symbol\": \"ACWF\"}}, \"aggs\":{ \"monthly_trading_days\":{ \"date_histogram\":{ \"field\": \"date\", \"interval\": \"month\", \"format\": \"yyyy-MM-dd\" } } } }'
```

**POST** cf\_etf\_hist\_price\_acwf\_auto\_interval\_date\_histogram

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs":{
    "monthly_trading_days": {
      "auto_date_histogram":{
        "field": "date",
        "buckets": "4",
        "format": "yyyy-MM-dd"
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_auto\_interval\_date\_histogram

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"query\": { \"match\": { \"symbol\": \"ACWF\"}}, \"aggs\":{ \"monthly_trading_days\":{ \"auto_date_histogram\":{ \"field\": \"date\", \"buckets\": \"4\", \"format\": \"yyyy-MM-dd\" } } } }'
```

**POST** cf\_etf\_hist\_price\_acwf\_ranges

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs":{
    "monthly_trading_days": {
      "range":{
        "field": "date",
        "format": "yyyy-MM-dd",
        "ranges": [{\"from\":\"2018-12-01\"},{\"to\":\"2019-04-01\"},{\"from\":\"2019-01-01\",\"to\":\"2019-02-01\"}]
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_ranges

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"query\": { \"match\": { \"symbol\": \"ACWF\"}}, \"aggs\":{ \"monthly_trading_days\":{ \"range\":{ \"field\": \"date\", \"format\": \"yyyy-MM-dd\", \"ranges\": [{\"from\":\"2018-12-01\"},{\"to\":\"2019-04-01\"},{\"from\":\"2019-01-01\",\"to\":\"2019-02-01\"}] } } } }'
```



POST cf\_etf\_hist\_price\_acwf\_date\_ranges

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF"}},
  "aggs":{
    "monthly_trading_days": {
      "date_range":{
        "field": "date",
        "format": "yyyy-MM-dd",
        "ranges": [{"from":"2018-12-01"}, {"to":"2019-04-01"}, {"from":"2019-01-01", "to":"2019-01-01| |+1M"}]
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_date\_ranges

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"query\": { \"match\": { \"symbol\": \"ACWF\"}}, \"aggs\":{ \"monthly_trading_days\": { \"date_range\":{ \"field\": \"date\", \"format\": \"yyyy-MM-dd\", \"ranges\": [{\"from\": \"2018-12-01\"},{\"to\": \"2019-04-01\"},{\"from\": \"2019-01-01\", \"to\": \"2019-01-01| |+1M\"}] } } } }'
```

POST cf\_etf\_hist\_price\_filter\_sub\_aggs

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "aggs":{
    "avg_changePercent_at_date": {
      "filter":{"term": {"date":"2019-02-15"}},
      "aggs": { "avg_changePercent": { "avg":{"field": "changePercent"}}}
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_filter\_sub\_aggs

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\"size\": 0, \"aggs\":{ \"avg_changePercent_at_date\": { \"filter\":{\"term\": {\"date\": \"2019-02-15\"}}, \"aggs\": {\"avg_changePercent\": {\"avg\":{\"field\": \"changePercent\"}}}} } } }'
```

POST cf\_etf\_hist\_price\_filters

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "term": {"date":"2019-02-15"}},
  "aggs":{
    "filters_avg_changePercent": {
      "filters":{
```

```
        "filters": {
            "less_than_avg": {"range": {"changePercent":{"lt":0.60385}}},
            "greater_than_avg":{"range": {"changePercent":{"gte":0.60385}}}
        }
    }
}
}
```

Example Request

cf\_etf\_hist\_price\_filters

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query": { "term": {"date":"2019-02-15"}}, "aggs":{"filters_avg_changePercent": { "filters":{"filters": { "less_than_avg": {"range": {"changePercent":{"lt":0.60385}}}, "greater_than_avg":{"range": {"changePercent":{"gte":0.60385}}} } } } } }'
```

## POST cf\_etf\_hist\_price\_terms\_rating

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "aggs":{
    "terms_on_rating": {
      "terms":{
        "field":"rating"
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_terms\_rating

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

## POST cf\_etf\_hist\_price\_significant\_terms

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query":{"match":{"rating":5}},
  "aggs":{
    "rating_vs_morningstar":{
      "significant_terms":{
        "field":"morningstar_category"
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_significant\_terms

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query":{"match":{"rating":5}}, "aggs":{"rating_vs_morningstar":{"significant_terms":{"field":"morningstar_category" } } } }'
```

## POST cf\_etf\_hist\_price\_significant\_text

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {"match": {"rating": 5}},
  "aggs": {
    "rating_vs_fund_name": {
      "significant_text": {
        "field": "fund_name",
        "exclude": ["us", "p", "s", "cap"],
        "size": 5
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_significant\_text

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --header "accept: application/json" --data '${\size\: 0, \query\: {\match\: {\rating\: 5}}, \aggs\: { \rating_vs_fund_name\: { \significant_text\: { \field\: \"fund_name\", \exclude\: [\"us\", \"p\", \"s\", \"cap\"], \size\: 5 } } } }'
```

POST cf\_etf\_hist\_price\_sampler  
http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size": 0,
  "aggs": {
    "sampling": {
      "sampler": { "shard_size": 150 },
      "aggs": {
        "significant_terms_category": {
          "significant_terms": {
            "field": "category"
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_sampler

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data '${\size\: 0, \aggs\: { \sampling\: { \sampler\: { \shard_size\: 150 }, \aggs\: { \significant_terms_category\: { \significant_terms\: { \field\: \"category\" } } } } } }'
```

POST cf\_etf\_hist\_price\_diversified\_sampler\_10  
http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size": 0,
  "aggs": {
    "sampling": {
      "diversified_sampler": { "field": "family", "shard_size": 150, "max_docs_per_value" : 10 },
      "aggs": {
        "significant_terms_category": {
          "significant_terms": {
            "field": "category"
          }
        }
      }
    }
  }
}
```

```
}
}
```

Example Request  
cf\_etf\_hist\_price\_diversified\_sampler\_10

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data '${\"size\": 0,
\"aggs\": { \"sampling\": { \"diversified_sampler\": {\"field\":\"family\", \"shard_size\":150, \"max_docs_per_value\" : 10}, \"aggs\": {
\"significant_terms_category\": { \"significant_terms\": { \"field\": \"category\" } } } } } }'
```

POST cf\_etf\_hist\_price\_diverified\_sampler\_61  
http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size": 0,
  "aggs": {
    "sampling": {
      "diversified_sampler": {"field":"family", "shard_size":150, "max_docs_per_value" : 61},
      "aggs": {
        "significant_terms_category": {
          "significant_terms": {
            "field": "category"
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_diverified\_sampler\_61

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data '${\"size\": 0,
\"aggs\": { \"sampling\": { \"diversified_sampler\": {\"field\":\"family\", \"shard_size\":150, \"max_docs_per_value\" : 61}, \"aggs\": {
\"significant_terms_category\": { \"significant_terms\": { \"field\": \"category\" } } } } } }'
```

POST cf\_etf\_dividend\_nested\_amount  
http://localhost:9200/cf\_etf\_dividend\_nested/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size":0,
  "aggs": {
    "per_symbol":{
      "terms": {"field":"symbol", "size":3},
      "aggs":{
        "total_dividend": {
          "nested": {
            "path":"announcement"
          },
          "aggs": {
            "total_amount": {"sum": {"field": "announcement.amount"}}
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_dividend\_nested\_amount

```
curl --location --request POST "http://localhost:9200/cf_etf_dividend_nested/_search" --header "Content-Type: application/json" --data
${\"size\":0, \"aggs\":{\"per_symbol\":{\"terms\":{\"field\":\"symbol\", \"size\":3}, \"aggs\":{\"total_dividend\":{\"nested\":
{\"path\":\"announcement\"}, \"aggs\":{\"total_amount\":{\"sum\":{\"field\":\"announcement.amount\"}}}}}}}}'
```

POST cf\_etf\_dividend\_reverse\_nested

http://localhost:9200/cf\_etf\_dividend\_nested/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size":0,
  "aggs": {
    "etf_category_distribution_on_dividend_type":{
      "nested": {
        "path":"announcement"
      },
      "aggs":{
        "by_dividend_type": {
          "terms": {"field":"announcement.type"},
          "aggs": {
            "total_by_etf_category":{
              "reverse_nested":{},
              "aggs": {
                "category":{"terms": {"field": "category"}}
              }
            }
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_dividend\_reverse\_nested

```
curl --location --request POST "http://localhost:9200/cf_etf_dividend_nested/_search" --header "Content-Type: application/json" --data $'{
  \"size\":0,
  \"aggs\": {
    \"etf_category_distribution_on_dividend_type\":{
      \"nested\": {
        \"path\":\"announcement\"
      },
      \"aggs\":{
        \"by_dividend_type\": {
          \"terms\": {\"field\":\"announcement.type\"},
          \"aggs\": {
            \"total_by_etf_category\":{
              \"reverse_nested\":{},
              \"aggs\": {
                \"category\":{\"terms\": {\"field\": \"category\"}}
              }
            }
          }
        }
      }
    }
  }
}'
```

POST cf\_etf\_global

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size":0,
  "query":{"prefix": {"family":"iShares"}}},
  "aggs": {
    "ishares_avg_rating": {"avg": {"field":"rating"}},
    "overall_avg_rating": {"global":{}, "aggs":{"global_avg_rating":{"avg":{"field":"rating"}}}}
  }
}
```

Example Request  
cf\_etf\_global

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data $'{
  \"size\":0,
  \"query\":{\"prefix\": {\"family\":\"iShares\"}},
  \"aggs\": {
    \"ishares_avg_rating\": {\"avg\": {\"field\":\"rating\"}},
    \"overall_avg_rating\": {\"global\":{},
    \"aggs\":{\"global_avg_rating\":{\"avg\":{\"field\":\"rating\"}}}}
  }
}'
```

POST cf\_etf\_missing\_category

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size":0,
  "aggs": {
    "not_rated_count": {
      "missing": {"field":"rating"}
```

```
}
}
```

Example Request  
cf\_etf\_missing\_category

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

## POST cf\_etf\_composite

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "query": {"query_string": {"query": "rating:[4 TO 5]"}},
  "size": 0,
  "aggs": {
    "multi_sources": {
      "composite": {
        "sources": [
          {"family": {"terms": {"field": "family"}}},
          {"rating": {"terms": {"field": "rating"}}}
        ],
        "size": 5
      }
    }
  }
}
```

Example Request  
cf\_etf\_composite

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data $'{"query":{"query_string":{"query":"rating:[4 TO 5]"}}, "size": 0, "aggs":{"multi_sources":{"composite":{"sources":[{"family":{"terms":{"field":"family"}}}, {"rating":{"terms":{"field":"rating"}}} ], "size":5 } } } }'
```

## POST cf\_etf\_adjacent\_matrix

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size": 0,
  "aggs": {
    "adjacency_filters": {
      "adjacency_matrix": {
        "filters": {
          "rating_gte_5": {"range":{"rating":{"gte":5}}},
          "family_prefix_A": {"prefix":{"family":"iShares"}}
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_adjacent\_matrix

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --data $'{"size": 0, "aggs":{"adjacency_filters":{"adjacency_matrix":{"filters":{"rating_gte_5":{"range":{"rating":{"gte":5}}}, "family_prefix_A":{"prefix":{"family":"iShares"}} } } } } }'
```

## POST cf\_etf\_dividend\_join\_parent\_aggs

localhost:9200/cf\_etf\_dividend\_join/\_search

HEADERS

Content-Type

application/json  
BODY

```
{
  "size":0,
  "aggs": {
    "cf_etf":{
      "parent": {
        "type": "dividend"
      },
      "aggs": {
        "count":{"value_count":{"field":"symbol"}}
      }
    }
  }
}
```

Example Request  
cf\_etf\_dividend\_join\_parent\_aggs

```
curl --location --request POST "localhost:9200/cf_etf_dividend_join/_search" --header "Content-Type: application/json" --data
$'{\"size\":0,\"aggs\":{\"cf_etf\":{\"parent\":{\"type\":\"dividend\"},\"aggs\":{\"count\":{\"value_count\":{\"field\":\"symbol\"}}}}}}'
```

POST cf\_etf\_dividend\_join\_children\_aggs  
localhost:9200/cf\_etf\_dividend\_join/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "aggs": {
    "dividends_for_symbol": {
      "terms": {"field": "symbol"},
      "aggs": {"dividend":{"children": {"type": "dividend" }},
        "aggs": {"total_dividend":{"sum":{"field":"amount"}}}}}}
  }
}
```

Example Request  
cf\_etf\_dividend\_join\_children\_aggs

```
curl --location --request POST "localhost:9200/cf_etf_dividend_join/_search" --header "Content-Type: application/json" --data
$'{\"size\":0,\"aggs\":{\"dividend_for_symbol\":{\"terms\":{\"field\":\"symbol\"},\"aggs\":{\"dividend\":{\"children\":{\"type\":\"dividend\"},\"aggs\":{\"total_dividend\":{\"sum\":{\"field\":\"amount\"}}}}}}}}'
```

POST cf\_etf\_hist\_price\_acwf\_avg\_monthly\_close  
http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query":{"match": {"symbol":"ACWF"}},
  "aggs":{
    "monthly_avg_close": {
      "date_histogram":{
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs":{
        "avg_close_on_month":{
          "avg":{"field":"close"}
        }
      }
    },
    "overall_avg_close":{
      "avg_bucket": {
        "buckets_path": "monthly_avg_close>avg_close_on_month"
      }
    }
  }
}
```



```
}
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_avg\_monthly\_close

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_avg_close": {
      "date_histogram": {
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "avg_close_on_month": {
          "avg": {
            "field": "close"
          }
        }
      }
    },
    "overall_avg_close": {
      "avg_bucket": {
        "buckets_path": "monthly_avg_close>avg_close_on_month"
      }
    }
  }
}
```

## POST cf\_etf\_hist\_price\_acwf\_max\_monthly\_avg\_close

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_avg_close": {
      "date_histogram": {
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "avg_close_on_month": {
          "avg": {
            "field": "close"
          }
        }
      }
    },
    "overall_max_avg_close": {
      "max_bucket": {
        "buckets_path": "monthly_avg_close>avg_close_on_month"
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_max\_monthly\_avg\_close

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_avg_close": {
      "date_histogram": {
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "avg_close_on_month": {
          "avg": {
            "field": "close"
          }
        }
      }
    },
    "overall_max_avg_close": {
      "max_bucket": {
        "buckets_path": "monthly_avg_close>avg_close_on_month"
      }
    }
  }
}
```

## POST cf\_etf\_hist\_price\_acwf\_min\_monthly\_avg\_close

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_avg_close": {
      "date_histogram": {
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "avg_close_on_month": {
          "avg": {
            "field": "close"
          }
        }
      }
    }
  }
}
```

```
    }
    },
    "overall_min_avg_close":{
      "min_bucket": {
        "buckets_path": "monthly_avg_close>avg_close_on_month"
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_acwf\_min\_monthly\_avg\_close

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header
"accept: application/json" --data $'{"size": 0, "query":{"match": {"symbol":"ACWF"}}}, {"aggs":{"monthly_avg_close": {
"date_histogram":{"field": "date", "interval": "month", "format": "yyyy-MM-dd" }, "aggs":{"avg_close_on_month":{"
"avg":{"field":"close"} } } }, "overall_min_avg_close":{"min_bucket": { "buckets_path":
"monthly_avg_close>avg_close_on_month" } } } }'
```

## POST cf\_etf\_hist\_price\_acwf\_sum\_monthly\_change

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query":{"match": {"symbol":"ACWF"}}},
  "aggs":{
    "monthly_change": {
      "date_histogram":{
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs":{
        "change_on_month":{
          "sum":{"field":"change"}
        }
      }
    },
    "overall_monthly_change":{
      "sum_bucket": {
        "buckets_path": "monthly_change>change_on_month"
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_acwf\_sum\_monthly\_change

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header
"accept: application/json" --data $'{"size": 0, "query":{"match": {"symbol":"ACWF"}}}, {"aggs":{"monthly_change": {
"date_histogram":{"field": "date", "interval": "month", "format": "yyyy-MM-dd" }, "aggs":{"change_on_month":{"
"sum":{"field":"change"} } } }, "overall_monthly_change":{"sum_bucket": { "buckets_path": "monthly_change>change_on_month"
} } } }'
```

## POST cf\_etf\_hist\_price\_acwf\_statistics\_monthly\_change

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query":{"match": {"symbol":"ACWF"}}},
  "aggs":{
    "monthly_change": {
      "date_histogram":{
        "field": "date",
```

```
        "interval": "month",
        "format": "yyyy-MM-dd"
    },
    "aggs": {
        "change_on_month": {
            "sum": { "field": "change" }
        }
    }
},
"stats_monthly_change": {
    "stats_bucket": {
        "buckets_path": "monthly_change>change_on_month"
    }
}
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_statistics\_monthly\_change

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query":{"match": {"symbol":"ACWF"}}, "aggs":{"monthly_change": {"date_histogram":{"field": "date", "interval": "month", "format": "yyyy-MM-dd" }, "aggs":{"change_on_month":{"sum":{"field":"change"} } } }, "overall_monthly_change":{"sum_bucket": { "buckets_path": "monthly_change>change_on_month" } } } }'
```

## POST cf\_etf\_hist\_price\_acwf\_extended\_statistics\_monthly\_change

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
    "size": 0,
    "query": {"match": {"symbol": "ACWF"}},
    "aggs": {
        "monthly_change": {
            "date_histogram": {
                "field": "date",
                "interval": "month",
                "format": "yyyy-MM-dd"
            },
            "aggs": {
                "change_on_month": {
                    "sum": { "field": "change" }
                }
            }
        },
        "extended_stats_monthly_change": {
            "extended_stats_bucket": {
                "buckets_path": "monthly_change>change_on_month"
            }
        }
    }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_extended\_statistics\_monthly\_change

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query":{"match": {"symbol":"ACWF"}}, "aggs":{"monthly_change": {"date_histogram":{"field": "date", "interval": "month", "format": "yyyy-MM-dd" }, "aggs":{"change_on_month":{"sum":{"field":"change"} } } }, "extended_stats_monthly_change":{"extended_stats_bucket": { "buckets_path": "monthly_change>change_on_month" } } } }'
```

## POST cf\_etf\_hist\_price\_acwf\_percentiles\_weekly\_change

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {"match": {"symbol": "ACWF"}},
  "aggs": {
    "weekly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "change_on_week": {
          "sum": {"field": "change"}
        }
      }
    },
    "percentile_weekly_change": {
      "percentiles_bucket": {
        "buckets_path": "weekly_change>change_on_week"
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_percentiles\_weekly\_change

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\n"size\\": 0, \n"query\\":{\n"match\\": {\n"symbol\\":\n"ACWF\\"}\n}}, \n"aggs\\":{\n"weekly_change\\": {\n"date_histogram\\":{\n"field\\": \n"date\\", \n"interval\\": \n"week\\", \n"format\\": \n"yyyy-MM-dd\\" }\n}, \n"aggs\\":{\n"change_on_week\\":{\n"sum\\": {\n"field\\":\n"change\\"} }\n}}\n}}, \n"percentile_weekly_change\\":{\n"percentiles_bucket\\": {\n"buckets_path\\": \n"weekly_change>change_on_week\\"} }\n}}\n}'
```

## POST cf\_etf\_hist\_price\_acwf\_cumulative\_sum

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {"match": {"symbol": "ACWF"}},
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "change_on_month": {
          "sum": {"field": "change"}
        },
        "cumulative_change": {
          "cumulative_sum": {
            "buckets_path": "change_on_month"
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_cumulative\_sum

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{\n"size\\":0,\n"query\\":{\n"match\\":{\n"symbol\\":\n"ACWF\\"}\n}},\n"aggs\\":{\n"monthly_change\\": {\n"date_histogram\\":{\n"field\\":\n"date\\",\n"interval\\":\n"month\\",\n"format\\":\n"yyyy-MM-dd\\"}\n},\n"aggs\\":{\n"change_on_month\\":{\n"sum\\": {\n"field\\":\n"change\\"}\n}},\n"cumulative_change\\":{\n"cumulative_sum\\":{\n"buckets_path\\":\n"change_on_month\\"}\n}}\n}}\n}'
```

## POST cf\_etf\_hist\_price\_acwf\_derivative

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type

application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {"match": {"symbol": "ACWF"}},
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "change_on_month": {
          "sum": {"field": "change"}
        },
        "first_order_derivative": {
          "derivative": {
            "buckets_path": "change_on_month"
          }
        },
        "second_order_derivative": {
          "derivative": {
            "buckets_path": "first_order_derivative"
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_derivative

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query":{"match":{"symbol":"ACWF"}}, "aggs":{"monthly_change":{"date_histogram":{"field":"date", "interval":"month", "format":"yyyy-MM-dd" }}, "aggs":{"change_on_month":{"sum":{"field":"change"} }}, "first_order_derivative":{"derivative":{"buckets_path":"change_on_month" } }, "second_order_derivative":{"derivative":{"buckets_path":"first_order_derivative" } } } } }'
```

## POST cf\_etf\_hist\_price\_bucket\_script

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {"match": {"symbol": "ACWF"}},
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "change_on_month": { "sum": {"field": "change"} },
        "min_change_on_month": { "min": {"field": "change"} },
        "max_change_on_month": { "max": {"field": "change"} },
        "range_of_change": {
          "bucket_script": {
            "buckets_path": {
              "min_value": "min_change_on_month",
              "max_value": "max_change_on_month"
            },
            "script": "params.max_value - params.min_value"
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_bucket\_script

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},\n"aggs":{"monthly_change":{"date_histogram":{"field":"date","interval":"month","format":"yyyy-MM-dd"},\n"aggs":{"change_on_month":{"sum":{"field":"change"}}},\n"min_change_on_month":{"min":{"field":"change"}}},\n"max_change_on_month":{"max":{"field":"change"}}},\n"range_of_change":{"bucket_script":{"buckets_path":{"min_value":"min_change_on_month","max_value":"max_change_on_month"},"script":"params.max_value - params.min_value"}}}}}'
```

## POST cf\_etf\_hist\_price\_bucket\_selector

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "negative_monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "month",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "change_on_month": {
          "sum": {
            "field": "change"
          }
        },
        "filter_positive_change_on_month": {
          "bucket_selector": {
            "buckets_path": {
              "monthly_change_value": "change_on_month"
            }
          },
          "script": "params.monthly_change_value<0"
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_bucket\_selector

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},\n"aggs":{"negative_monthly_change":{"date_histogram":{"field":"date","interval":"month","format":"yyyy-MM-dd"},\n"aggs":{"change_on_month":{"sum":{"field":"change"}}},\n"filter_positive_change_on_month":{"bucket_selector":{"buckets_path":{"monthly_change_value":"change_on_month"},"script":"params.monthly_change_value<0"}}}}}'
```

## POST cf\_etf\_dividend\_nested\_amount bucket\_sort

http://localhost:9200/cf\_etf\_dividend\_nested/\_search

### HEADERS

Content-Type  
application/json  
BODY

```
{
  "size": 0,
  "aggs": {
    "per_symbol": {
      "terms": {
        "field": "symbol"
      },
      "aggs": {
        "total_dividend": {
          "nested": {
            "path": "announcement"
          },
          "aggs": {
            "total_amount": {
              "sum": {
                "field": "announcement.amount"
              }
            }
          }
        },
        "sort": {
          "bucket_sort": {
            "sort": [
              {
                "total_dividend.total_amount": {
                  "order": "desc"
                }
              }
            ],
            "from": 0,
            "size": 3
          }
        }
      }
    }
  }
}
```

```
}
}
}
```

Example Request

cf\_etf\_dividend\_nested\_amount bucket\_sort

```
curl --location --request POST "http://localhost:9200/cf_etf_dividend_nested/_search" --header "Content-Type: application/json" --data $'{ \
"size\:0, \
"aggs\: { \
  "per_symbol\: { \
    "terms\: { \
      "field\: \"symbol\
    } \
  } \
  "total_dividend\: { \
    "nested\: { \
      "path\: \"announcement\
    } \
  } \
  "total_amount\: { \
    "sum\: { \
      "field\: \"announcement.amount\
    } \
  } \
  "sort\: { \
    "bucket_sort\: { \
      "sort\: [ \
        { \
          "total_dividend.total_amount\: { \
            "order\: \"desc\
          } \
        } \
      ] \
    } \
  } \
}
```

## POST cf\_etf\_hist\_price\_acwf\_serial\_diff

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF" } },
  "aggs": {
    "serial_diff_weekly_avg_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_avg_change": {
          "avg": { "field": "change" }
        },
        "weekly_avg_serial_diff": {
          "serial_diff": {
            "buckets_path": "weekly_avg_change",
            "lag": 1
          }
        }
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_acwf\_serial\_diff

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --data $'{ \
"size\: 0, \
"query\: { \
  "match\: { \
    "symbol\: \"ACWF\
  } \
} \
"aggs\: { \
  "serial_diff_weekly_avg_change\: { \
    "date_histogram\: { \
      "field\: \"date\
    } \
    "interval\: \"week\
    "format\: \"yyyy-MM-dd\
  } \
  "weekly_avg_change\: { \
    "avg\: { \
      "field\: \"change\
    } \
  } \
  "weekly_avg_serial_diff\: { \
    "serial_diff\: { \
      "buckets_path\: \"weekly_avg_change\
      "lag\: 1 \
    } \
  } \
}
```

## POST cf\_etf\_hist\_price\_acwf\_moving\_avg\_simple

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF" } },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "moving_avg": {
        "field": "change",
        "interval": "month",
        "format": "yyyy-MM-dd"
      }
    }
  }
}
```



```
{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "weekly_moving_avg": {
          "moving_avg": {
            "buckets_path": "weekly_change",
            "model": "simple",
            "window": 4,
            "predict": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_avg\_simple

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "weekly_moving_avg": {
          "moving_avg": {
            "buckets_path": "weekly_change",
            "model": "simple",
            "window": 4,
            "predict": 4
          }
        }
      }
    }
  }
}'
```

## POST cf\_etf\_hist\_price\_acwf\_moving\_avg\_linear

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "weekly_moving_avg": {
          "moving_avg": {
            "buckets_path": "weekly_change",
            "model": "linear",
            "window": 4,
            "predict": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_avg\_linear

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "weekly_moving_avg": {
          "moving_avg": {
            "buckets_path": "weekly_change",
            "model": "linear",
            "window": 4,
            "predict": 4
          }
        }
      }
    }
  }
}'
```

## POST cf\_etf\_hist\_price\_acwf\_moving\_avg\_ewma

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json

BODY

```
{
  "size": 0,
  "query": {"match": {"symbol": "ACWF"}},
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {"field": "change"}
        },
        "weekly_moving_avg": {
          "moving_avg": {
            "buckets_path": "weekly_change",
            "model": "ewma",
            "settings": {"alpha": 0.3},
            "window": 4,
            "predict": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_avg\_ewma

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},\n"aggs":{"monthly_change":{"date_histogram":{"field":"date","interval":"week","format":"yyyy-MM-dd"},"aggs":{"weekly_change":{"sum":{"field":"change"}}},\n"weekly_moving_avg":{"moving_avg":{"buckets_path":"weekly_change","model":"ewma","settings":{"alpha":0.3},"window":4,"predict":4}}}}}'
```

POST cf\_etf\_hist\_price\_acwf\_moving\_avg\_holt\_linear

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {"match": {"symbol": "ACWF"}},
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {"field": "change"}
        },
        "weekly_moving_avg": {
          "moving_avg": {
            "buckets_path": "weekly_change",
            "model": "holt",
            "settings": {"alpha": 0.3, "beta": 0.3},
            "window": 4,
            "predict": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_avg\_holt\_linear

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, \n"query":{"match": {"symbol":"ACWF"}}, \n"aggs":{"monthly_change": { \n"date_histogram":{"field": "date", \n"interval": "week", \n"format": "yyyy-MM-dd" }, \n"aggs": { \n"weekly_change":{"sum":
```

```
{\"field\": \"change\"} }}, \"weekly_moving_avg\": { \"buckets_path\": \"weekly_change\", \"model\": \"holt\", \"settings\": {\"alpha\": 0.3, \"beta\": 0.3}, \"window\": 4, \"predict\": 4 } } } }
```

POST cf\_etf\_hist\_price\_acwf\_moving\_avg\_holt\_winters

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF" } },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": { "field": "change" }
        },
        "weekly_moving_avg": {
          "moving_avg": {
            "buckets_path": "weekly_change",
            "model": "holt_winters",
            "settings": { "type": "mult", "alpha": 0.8, "beta": 0.3, "gamma": 0.3, "period": 1 },
            "window": 4,
            "predict": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_avg\_holt\_winters

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, "query": {"match": {"symbol": "ACWF"}}, "aggs": {"monthly_change": {"date_histogram": {"field": "date", "interval": "week", "format": "yyyy-MM-dd" }, "aggs": {"weekly_change": {"sum": {"field": "change"} }}, "weekly_moving_avg": { "moving_avg": { "buckets_path": "weekly_change", "model": "holt_winters", "settings": {"type": "mult", "alpha": 0.8, "beta": 0.3, "gamma": 0.3, "period": 1}, "window": 4, "predict": 4 } } } } }
```

POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_max

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF" } },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": { "field": "change" }
        },
        "max_weekly_change": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.max(values)",
            "window": 4
          }
        }
      }
    }
  }
}
```

```
    }
  }
}
}
```

Example Request

cf\_etf\_hist\_price\_acwf\_moving\_fn\_max

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},\n"aggs":{"monthly_change":{"date_histogram":{"field":"date","interval":"week","format":"yyyy-MM-dd"},"aggs":{"weekly_change":{"sum":{"field":"change"}}},\n"max_weekly_change":{"moving_fn":{"buckets_path":"weekly_change","script":"MovingFunctions.max(values)","window":4}}}}}'
```

## POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_min

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF" } },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": { "field": "change" }
        },
        "min_weekly_change": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.min(values)",
            "window": 4
          }
        }
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_acwf\_moving\_fn\_min

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0, \n"query":{"match": {"symbol":"ACWF"}}, \n"aggs":{" \n"monthly_change": { \n"date_histogram":{" \n"field": \n"date", \n"interval": \n"week", \n"format": \n"yyyy-MM-dd" }}, \n"aggs":{" \n"weekly_change":{" \n"sum": { \n"field": \n"change" } }, \n"min_weekly_change": { \n"moving_fn":{" \n"buckets_path": \n"weekly_change", \n"script": \n"MovingFunctions.min(values)", \n"window":4 } } } } } }'
```

## POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_sum

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF" } },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": { "field": "change" }
        },
        "max_weekly_change": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.max(values)",
            "window": 4
          }
        }
      }
    }
  }
}
```

```
{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "total_weekly_change": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.sum(values)",
            "window": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_fn\_sum

```
curl --location --request POST 'http://localhost:9200/cf_etf_hist_price/_search' --header 'Content-Type: application/json' --header 'accept: application/json' --data $'{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "total_weekly_change": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.sum(values)",
            "window": 4
          }
        }
      }
    }
  }
}'
```

## POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_unweightedAvg

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "weekly_change_unweightedAvg": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.unweightedAvg(values)",
            "window": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_fn\_unweightedAvg

```
curl --location --request POST 'http://localhost:9200/cf_etf_hist_price/_search' --header 'Content-Type: application/json' --header 'accept: application/json' --data $'{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "weekly_change_unweightedAvg": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.unweightedAvg(values)",
            "window": 4
          }
        }
      }
    }
  }
}'
```

## POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_linearweightedAvg

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {"match": {"symbol": "ACWF"}},
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {"field": "change"}
        },
        "weekly_change_unweightedAvg": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.linearWeightedAvg(values)",
            "window": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_fn\_linearweightedAvg

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},\n"aggs":{"weekly_change":{"date_histogram":{"field":"date","interval":"week","format":"yyyy-MM-dd"},"aggs":{"weekly_change":{"sum":{"field":"change"}}},"weekly_change_unweightedAvg":{"moving_fn":{"buckets_path":"weekly_change","script":"MovingFunctions.unweightedAvg(values)","window":4}}}}}'
```

## POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_stdDev

http://localhost:9200/cf\_etf\_hist\_price/\_search

### HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {"match": {"symbol": "ACWF"}},
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {"field": "change"}
        },
        "weekly_change_stdDev": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.stdDev(values, MovingFunctions.unweightedAvg(values))",
            "window": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_fn\_stdDev

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},\n"aggs":{"monthly_change":{"date_histogram":{"field":"date","interval":"week","format":"yyyy-MM-dd"},"aggs":{"weekly_change":{"sum":{"field":"change"}}},"weekly_change_stdDev":{"moving_fn":{"buckets_path":"weekly_change","script":"MovingFunctions.stdDev(values,MovingFunctions.unweightedAvg(values))","window":4}}}}}'
```

POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_ewma

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF" } },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": { "field": "change" }
        },
        "weekly_change_ewma": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.ewma(values, 0.3)",
            "window": 4
          }
        }
      }
    }
  }
}
```

Example Request  
cf\_etf\_hist\_price\_acwf\_moving\_fn\_ewma

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},\n"aggs":{"monthly_change":{"date_histogram":{"field":"date","interval":"week","format":"yyyy-MM-dd"},"aggs":{"weekly_change":{"sum":{"field":"change"}},\n"weekly_change_ewma":{"moving_fn":{"buckets_path":"weekly_change","script":"MovingFunctions.ewma(values,0.3)","window":4}}}}}}'
```

POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_holt

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": { "match": { "symbol": "ACWF" } },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": { "field": "change" }
        },
        "weekly_change_holt": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": "MovingFunctions.holt(values, 0.3, 0.3)",
            "window": 4
          }
        }
      }
    }
  }
}
```

Example Request



cf\_etf\_hist\_price\_acwf\_moving\_fn\_holt

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size":0,"query":{"match":{"symbol":"ACWF"}},"aggs":{"monthly_change":{"date_histogram":{"field":"date","interval":"week","format":"yyyy-MM-dd"},"aggs":{"weekly_change":{"sum":{"field":"change"}}},"weekly_change_holt":{"moving_fn":{"buckets_path":"weekly_change","script":"MovingFunctions.holt(values,0.3,0.3)","window":4}}}}}'
```

POST cf\_etf\_hist\_price\_acwf\_moving\_fn\_holtwinters

http://localhost:9200/cf\_etf\_hist\_price/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "size": 0,
  "query": {
    "match": {
      "symbol": "ACWF"
    }
  },
  "aggs": {
    "monthly_change": {
      "date_histogram": {
        "field": "date",
        "interval": "week",
        "format": "yyyy-MM-dd"
      },
      "aggs": {
        "weekly_change": {
          "sum": {
            "field": "change"
          }
        },
        "weekly_change_holtWinters": {
          "moving_fn": {
            "buckets_path": "weekly_change",
            "script": " MovingFunctions.holtWinters(values, 0.8, 0.3, 0.1, 1, false)",
            "window": 4
          }
        }
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_acwf\_moving\_fn\_holtwinters

```
curl --location --request POST "http://localhost:9200/cf_etf_hist_price/_search" --header "Content-Type: application/json" --header "accept: application/json" --data $'{"size": 0,"query":{"match":{"symbol":"ACWF"}},"aggs":{"monthly_change":{"date_histogram":{"field":"date","interval":"week","format":"yyyy-MM-dd"},"aggs":{"weekly_change":{"sum":{"field":"change"}}},"weekly_change_holtWinters":{"moving_fn":{"buckets_path":"weekly_change","script":" MovingFunctions.holtWinters(values,0.8,0.3,0.1,1,false)","window":4}}}}}'
```

POST cf\_etf\_hist\_price\_terms\_rating post\_filter

http://localhost:9200/cf\_etf/\_search

HEADERS

Content-Type  
application/json  
accept  
application/json  
BODY

```
{
  "aggs": {
    "terms_on_rating": {
      "terms": {
        "field": "rating"
      }
    }
  },
  "post_filter": {
    "range": {
      "rating": {
        "gte": 5
      }
    }
  }
}
```

Example Request

cf\_etf\_hist\_price\_terms\_rating post\_filter

```
curl --location --request POST "http://localhost:9200/cf_etf/_search" --header "Content-Type: application/json" --header "accept: application/json" --data '${\"aggs\":{\"terms_on_rating\":{\"terms\":{\"field\":\"rating\"}}}, \"post_filter\":{\"range\":{\"rating\":{\"gte\":5}}}}'
```