

## **CIQ Web Service Estimates Details Specifications 1.0**

**Date Created: 11.05.2008  
Last Updated: 11.20.2008**

<b>Business Owner:</b>	Jay Zachter, Michael Yusko
<b>Technology Owner:</b>	William Murphy (CIQ),
<b>Business Analysts</b>	Shawn West
<b>Version</b>	1.0

## CIQ Web Service Solution Specifications

---

Application Framework	3
Web Service Versioning	4
Service Changes	4
Scenario	5
GetEstimateDetail	5
GetEstimateDetail Ports (Functions):	5
Appendix	10
Logic Used for Max Data Check (Consensus)	10
Logic For Max Data Check (Detail)	11

## CIQ Web Service Solution Specifications

---

### Application Framework

The primary technology for this solution is XML Web Services (SOAP). Capital IQ hosts an API that responds to XML requests according to this API, and returns XML structured data in response. These XML requests are encrypted via the standard HTTPS protocol.

A secondary technology for this solution is the integration of CIQ DataFeeds on client database tier. This allows for reduced network traffic for common items that change infrequently.

Capital IQ hosts this data on Windows-based servers, powered by Microsoft SQL Server in an active-passive failover cluster configuration. Data is stored in multiple fully redundant EMC Storage Area Networks (SANs). The servers that run the platform are hosted at Quality Technology Services with a disaster recovery site at XO. At all levels, these environments are redundant, fault tolerant, and backed up to industry standards.

Web Services Description Language (WSDL) documents describe the detailed Services & Ports (Function Calls) available in this specification. See <http://www.w3.org/TR/wsdl> for more on WSDL.

Please note that all Web Service and WSDL URLs in this document are subject to change based on changing infrastructure requirements. CIQ will provide sufficient advanced notice to the client before changing any URL, hostname, IP address, etc. It is recommended that these URLs be configurable (via config files, etc.) on the client application so that changes can be handled with minimal user downtime. CIQ monitors activity on Production systems and may shut down improper-use processes or user accounts as required to preserve overall system health.

All Web Services requests and responses in this solution are encoded in the UTF-8 character set (<http://en.wikipedia.org/wiki/UTF-8>). Some string data in this solution is expected to only contain Windows-1252 characters (<http://en.wikipedia.org/wiki/Windows-1252>); these are labeled with "(w1252)" in this document. Other string data in this solution allows full UTF-8 characters; these are labeled with "(UTF-8)" in this document. Email addresses (labeled "(email)" in this document) and website URLs (labeled "(URL)" in this document) have more limited valid character sets. See [http://en.wikipedia.org/wiki/Email\\_address](http://en.wikipedia.org/wiki/Email_address) and <http://en.wikipedia.org/wiki/URL> for more information.

All the web services have a WSDL definition that external developers will code against and pull in data that is served from the same Capital IQ data repository as our web platform. For a full menu of our Web Services and implementation documentation, please contact your account manager.

## CIQ Web Service Solution Specifications

### Web Service Versioning

**Versioning Web Services:** Over time, Capital IQ may need to extend the tags or datasets supported by our Web services. As a result we have created a URL based versioning solution provides a scalable framework for the future. Versioning provides a way for to accommodate these enhancements in a graceful manner.

**Recommendation:** Capital IQ recommends that all users upgrade to version 1.0 if they are using legacy services, to conform to the new URL formats.

**How versioning works:** Please note in the example below *<ServiceName.asmx>* is replaced with the name of the service and is used for illustration purposes only.

1. Web Service changes are captured as a new version of the file in a new directory.
  - a. **Version 1** - <https://api.capitaliq.com/ciqdotnet/api/1.0/<ServiceName.asmx>> - Represents the first release of the service
  - b. **Version 2** - <https://api.capitaliq.com/ciqdotnet/api/2.0/<ServiceName.asmx>> - Represents the second release and breaking change or significant enhancement.
  - c. Clients have the ability to transition to the new version of the service or stay on the original version until they can transition older code.
2. Latest version of the Service will be located at the following URL.  
<https://api.capitaliq.com/ciqdotnet/api/current/<ServiceName.asmx>>. Using the example in section i above <https://api.capitaliq.com/ciqdotnet/api/2.0/<ServiceName.asmx>> would be in its own directory and referenced in the current directory.

### Service Changes

#### Estimates

Service	Version	Comments
URL	Current	<a href="https://api.capitaliq.com/ciqdotnet/api/current/Estimates.asmx?WSDL">https://api.capitaliq.com/ciqdotnet/api/current/Estimates.asmx?WSDL</a>
URL	1.0	<a href="https://api.capitaliq.com/CIQDotNet/api/1.0/Estimates.asmx?WSDL">https://api.capitaliq.com/CIQDotNet/api/1.0/Estimates.asmx?WSDL</a>

  

Release	Version	Comments
11/2008	1.0	First Release of Estimates Consensus
11/2008	1.0	First Release of Estimates Detail

## CIQ Web Service Solution Specifications

### Scenario

Capital IQ (CIQ) provides a Web Service solution that enables a client application to retrieve Estimate Consensus and Consensus Detail. The input criteria is data based on start date, end date, period dates, data items and trading items. There are four functions available that support data retrieval base on both Relative Period and Absolute Date inputs.

UserObjectID and log-in credentials are required to use this service. The parameter is required to track usage statistics this will be provided was part of the entitlement process. It is assumed that the proper "capabilities", or data access rights, are managed by the client application for Users. No entitlements are evaluated for consensus estimates data.

This function returns consensus estimates data for the given companies and/or trading items, limited by other criteria such as period range, period type, and DataItems. This function returns Actuals data (historical results), if given the appropriate dataItemIDs. Actuals are not returned at the detail level, because this data cannot be attributed to any one Contributor.

### GetEstimateDetail

This section of the specification allows the client application to request and receive Estimates (i.e. forecast or forward-looking numbers published by independent analysts), Guidance (i.e. forecast or forward-looking number published by the company itself), and Actuals (i.e. historical results).

The functions in this portion of the spec dealing with Company information work with CIQ CompanyID. Hence, the client application must use the Company resolution function `SearchCompanies()` to resolve names or symbols to CIQ Company IDs before working with Estimates data. Additionally, since some Estimates data can pertain to an individual Trading Item (i.e. security listing) issued by a Company, rather than the whole Company, these functions work with CIQ TradingItemIDs for both input parameters and output results. TradingItemIDs are returned by `GetCompanyDetail()`

This function returns detailed estimates data for the given companies or trading items, limited by other criteria such as Contributor, date range, period type, and DataItems. Note that this function does not return Actuals data (historical results), even if given the appropriate dataItemIDs. Actuals are not returned at the detail level, because this data cannot be attributed to any one Contributor. Use the `GetEstimateConsensus...` to retrieve Actuals data.

### GetEstimateDetail Ports (Functions):

**Relative:** For period estimate relative to a current period use these inputs

```
EstimateDetail GetEstimateDetail(
    Integer companyId(), Integer tradingItemId(), Integer researchContributorId ()
    Integer startPeriodOffset, Integer endPeriodOffset, Integer periodTypeId(),
    Integer dataItemId(), DateTime startAsOfDate, Datetime endAsOfDate,
    Integer currencyID, Integer currencyConversionMethodId, Integer userObjectID);
```

**Absolute:** For date based estimates use these inputs

```
EstimateDetail GetEstimateDetail(
    Integer companyId(), Integer tradingItemId(), Integer researchContributorId ()
    DateTime startPeriodDate, DateTime endPeriodDate, Integer periodTypeId(),
    Integer dataItemId(), DateTime startAsOfDate, Datetime endAsOfDate, Integer currencyID,
    Integer currencyConversionMethodId, Integer userObjectID);
```

## CIQ Web Service Solution Specifications

---

### Parameters

1. Array of Integer `companyId()` – Each item of the array is a single CompanyID corresponding to a company that has consensus estimates data. At least one valid `companyId` is required. **Input** [Required/Optional], [Multiple].
2. Array of Integer `tradingItemId()` – Each item of the array is a single TradingItemId corresponding to a security listed on a particular exchange that has consensus estimates data. Supply an empty array if estimates should be returned for all TradingItems for each Company in `companyId()`. **Input** [Required/Optional], [Multiple].
  - a. **Client Note:** [Required/Optional] Either of these two are required for input in this service.
    - i. If `tradingItemId()` is given as an empty array, this function returns estimates data for every trading item that has consensus estimates data for the given CompanyIDs.
    - ii. Use the `tradingItemId()` parameter to return data for just the individual Trading Items issued by Companies. The company-level data items will be returned when a trading item is specified.
  - b. **Client Note:** Only data points with non-NULL data are returned by this function. “Empty” periods and/or DataItems are not returned. To prevent performance problems, the following formula is used to calculate the maximum amount of data that can be returned by a single call:
    - i. For detail:
    - ii.  $(\text{periods}) \times (\text{trading items OR } 1.5 * \text{companies}) \times (\text{days in as of date range} / 10) \times (\text{data items}) \times (\text{contributors})$
3. An Array of Integer `researchContributorID()` – Each item of the array is a single unique identifier corresponding to a Contributor that issues estimates. Supply an empty array if Estimates from all Contributors should be returned. To Access a full list of available Contributor via Capital IQ Reference data web service Id #30. **Input** [Optional], [Multiple]
4. Datetime `startPeriodDate` – The oldest period for which the estimate date should be returned. To retrieve all historical estimate data enter the historical date of 1/1/1950. **Input** [Required], [Single].
5. Datetime `endPeriodDate` – The period for which estimates data should be returned that is furthest in the future. **Input** [Required], [Single].
  - a. **Client Note:** The Absolute interface uses `[startPeriodDate/endPeriodDate]` are used when retrieving estimates based on specific time periods.
6. Integer `startPeriodOffset` – The oldest relative period for which estimates/actual data should be returned. Supply a value of 0 to return the current period of consensus estimates data. **Input** [Required], [Single].
7. Integer `endPeriodOffset` – The relative period for which estimates/actual data should be returned that is farthest in the future. **Input** [Required], [Single].
  - a. **Client Note** The Relative interface uses `[startPeriodOffset/endPeriodOffset]` when retrieving estimates based on fiscal quarters relative to current quarter. i.e. 0 = Today, Negative (-1) would be one quarter going backwards in history from the current fiscal quarter, Positive (+4) goes forward four fiscal quarters into the future.
8. Integer `StartAsOfDate` – Return consensus estimates calculated as of this start date and time (EST/EDT). For “latest”, specify a future date, such as 12:00AM tomorrow or leave the input as BLANK/[NULL]. Specifying 12:00AM today will exclude consensus estimates. E.g. 1/1/2007 to 1/1/2008. This will include estimate which was given in 12/12/2006 which expired in 1/12/2007 **Input** [Optional], [Single].
9. Integer `EndAsOfDate` – Return consensus estimates calculated as of this end date and time (EST/EDT). **Input** [Optional], [Single]
  - a. **Client Note** Both Start and End Date can be used to determine the range when an estimate was calculated. So any estimate calculated for a given period within this range would come.

## CIQ Web Service Solution Specifications

10. Array of Integer `periodTypeID()` – Each item in the array identifies the periodicity of the estimates data to be returned. Supply an empty array if estimates should be returned for all Period Types.

**Input** [Optional], [Multiple] Possible values:

ID	Name
1	Fiscal Year
2	Quarterly
7	Calendar Year
8	Non-periodic
10	Semi-annual
12	NTM

11. Array of Integer `dataItemID()` – Limits the data points that are returned to only the `dataItemID`s in the array. At least one valid `dataItemID` is required. **Input** [Required], [Multiple].

- a. **Client Note:** For Recommendation data (`dataItemID` = 21625, 104602), To access a full list of available Estimate Data Items via Capital IQ Reference data web service use Id #25. Here is an theoretical example of Recommendation reference data for one Contributor:

ID	RecommendationName	Contributor CompanyID	Contributor Value	Standardized Value
1	High	99999	3.0	4.0
2	Medium	99999	2.0	3.0
3	Low	99999	1.0	2.0
4	Restricted Coverage	99999	NULL	NULL
5	No Recommendation	99999	NULL	NULL

12. Integer **currencyID** – The currency in which to display the financial data. Monetary data will be converted to this currency, if collected in a different currency. **Default:** [0] Reported Currency, **Input** [Single], [Optional] possible values:

ID	Name
0	Reported Currency
55	British Pound
27	Canadian Dollar
50	European Union Euro
64	Hong Kong Dollar
79	Japanese Yen
160	US Dollar

13. Integer **currencyConversionMethod** – If the currency is not the reported currency, this parameter controls how the data should be currency converted. **Default:** [0] Historical , [Single], [Optional] possible values:

ID	Name
0	Historical as of Period End Date
1	Today's Spot Rate

14. Integer `userObjectId` – The User for whom usage statistics and entitlements are tracked. **Input** [Required], [Single].

- a. **Client Note:** Capital IQ will provide the `userObjectId`, `UserID`, and `Password` for use in the client application as part of the sign on process. An exception will be thrown if the `userObjectId` is not provided as input.

## CIQ Web Service Solution Specifications

**Returns:** Returns an array of EstimateDetail, a container object with header info for a set of detailed estimates data. EstimateDetailData holds an array of EstimateDetailDataValues Objects each containing header information for a set of consensus estimate data.

### EstimateDetail

Elements:

#### a. EstimateDetailData

Attributes:

- i. Integer CompanyId – CIQ Company ID of the company the set of consensus estimates data is for.
- ii. Integer TradingItemId – CIQ Trading Item ID of the security listing the set of consensus estimates data is for.
- iii. Integer ResearchContributorID – single unique identifier corresponding to a Contributor that issues estimates
- iv. Integer FiscalYear – Fiscal year that the set of estimates is for.
- v. Integer FiscalQuarter – Fiscal quarter (or semi-annual period) that the set of estimates is for.
- vi. Integer CalendarYear – Calendar year that the set of estimates is for.
- vii. Integer CalendarQuarter – Calendar quarter (or semi-annual period) that the set of estimates is for.
- viii. Integer PeriodTypeID – See parameters for explanation.
- ix. DateTime PeriodEndDate – The date and time at which the estimate was calculated for.
- x. Integer PeriodOffset – The offset value of the period that the estimate is for.

#### xi. Array of Integer EstimateDetailDataValues (optional, multiple)

1. Integer DataItemID – Relates to a specific Estimate Datapoint. To access a full list of Estimates Data Items via Capital IQ Reference data web service use Id #25.
2. String DataItemValue – (0-255) The estimate value. (W1252)
3. Integer ScaleId – Possible values

ID	Name
1	Actual
2	Thousands
3	Millions
4	Billions

4. Integer UnitTypeID – Possible values

ID	Name
1	Currency
2	Ratio
3	Percentage
4	Date
5	Text
6	Enumeration
7	Boolean
8	Other

5. Integer CurrencyID – The currency in which to display the financial data. Monetary data will be converted to this currency, if collected in a different currency. To access a full list of available currencies via Capital IQ Reference data web service Id #26.

ID	Name
0	Reported Currency
55	British Pound
27	Canadian Dollar
79	Japanese Yen
160	US Dollar



## CIQ Web Service Solution Specifications

---

6. Date **EstimateStartDate** – The earliest date that the estimate value is valid.
7. Date **EstimateExpireDate** – The date on which Estimate is set to expire. This occurs when a new estimate is created by the contributor which expires the previous estimate. For Latest, this is set to year 2079.
8. Boolean **ExcludedFromConsensusFlag** – Data item is excluded from consensus estimates?
9. String **ExclusionComment** – Reserved for future use (W1252)
10. Integer **ProfessionalId** – This is the ProfessionalId of the analyst which has given the estimate.
11. String **AnalystName** – (0 – 185) The name of the analyst that reported the detailed estimates data. (W1252)
12. DateTime **CurrencyConversionDate** – The date the currency rate was sourced.
13. Double **CurrencyConversionRate** – The numeric amount of the conversion
14. Integer **CurrencyConversionMethod** – If the currency is not the reported currency, this parameter controls how the data should be currency converted.

ID	Name
0	Historical as of Estimate Date
1	Today's Spot Rate
2	Historical as of Period End Date

### Exceptions

1. An exception will be thrown if the request cannot be authenticated via a session cookie.
2. An exception will be thrown if any parameter is out of range.
3. An exception will be thrown if too much data would be returned, as determined by the input parameter formula.
4. An exception will be thrown if `companyID()` does not contain any valid CompanyIDs.
5. An exception will be thrown if `dataItemID()` does not contain any valid DataItemIDs.
6. An exception will be thrown if client application does not have the correct Capability assigned.
7. An exception will be thrown EstimatePeriodTypeId: \_\_\_\_ is not a valid value
8. An exception will be thrown endPeriodDate may not be null or earlier than startPeriodDate
9. An exception will be thrown if Too much data requested
10. An exception will be thrown if `userObjectID` is not supplied.
11. Detail Only: An exception will be thrown if Invalid contributors

## Appendix

### Logic Used for Max Data Check (Consensus)

Y → Number of years they requested data for, rounded to the nearest whole number (with a minimum of 1). This is weighted, because we have much less data in earlier years. Data requested from 2002 and forward counts normally, but:

Any data requested between 1/1/1994 and 1/1/2002 counts for half, any data requested before 1/1/1994 only counts as one-fifth.

P → Periods requested. This is equal to the sum of the following:

If CY periodType is selected: Y

If FY periodType is selected: Y

If NTM periodType is selected: Y

If FQ periodType is selected: 4\*Y

If Semi-Annual periodType is selected: 4\*Y

If non-periodic is selected: 1

T → Number of tradingItemIds that they entered. If they entered companyIds, then use 1.5 times the number of companyIds they entered, rounded to the nearest whole number.

D → The number of days they requested (as of date). For periodic data, if they selected more than 1200 days of data, we set D = 1200. (this is because there are almost never estimates more than 1200 days in advance, we shouldn't count it against their limit). We apply the same weighting based on dates to D as we did to Y. This is because, in addition to having fewer data points for older years, we have fewer contributors with fewer revision, and thus fewer changes in the consensus of those data points.

I → The number of dataItemIds they requested.

Periodic →  $T * P * I * (D/20)$

NonPeriodic →  $T * I * (D/10)$

*The reason for the D/10 and D/20 is because estimates typically change every 10-20 days (10 for non-periodic, 20 for periodic).*

If the sum of the periodic and non-periodic data they requested is less than the app setting "MaxSizeForEstimatesWebService", then they are allowed to make the request.

The value of this setting is currently = 50000.

## CIQ Web Service Solution Specifications

---

### Logic For Max Data Check (Detail)

First do the max data check for consensus. Multiply by the number of contributors selected.  
If none were selected (all contributors), assume 12.