

# **inContact Workforce Management v2**

## **Forecaster Web Site User Manual**

---

[www.incontact.com](http://www.incontact.com)

# inContact WFM v2 Forecaster Web Site User Manual

- **Version** — 16.1
- **Revision** — March 2016
- **About inContact** — inContact (NASDAQ: SAAS) is leader in cloud contact center software, helping organizations around the globe create customer and contact center employee experiences that are more personalized, more empowering and more engaging today, tomorrow and in the future. inContact focuses on continuous innovation and is the only provider to offer core contact center infrastructure, workforce optimization plus an enterprise-class telecommunications network for the most complete customer journey management. inContact offers customers a choice of deployment options. To learn more, visit [www.inContact.com](http://www.inContact.com).

Excel and Internet Explorer are registered trademarks of Microsoft Corporation.

- **Copyright** — ©2016 inContact, Inc.
- **Disclaimer** — inContact reserves the right to update or append this document, as needed.
- **Contact** — Send suggestions or corrections regarding this guide to [documentationsrequest-discover@incontact.com](mailto:documentationsrequest-discover@incontact.com).

# Table of Contents

- 1. Overview ..... 7
  - 1.1. Browser Requirements ..... 7
- 2. Home Page Features ..... 7
  - 2.1. Login ..... 7
  - 2.2. Discussions..... 8
  - 2.3. Announcements ..... 10
  - 2.4. Contacts..... 10
  - 2.5. Links..... 11
  - 2.6. Events ..... 11
  - 2.7. Change Password ..... 11
  - 2.8. Logout ..... 12
- 3. Forecast Profiles ..... 13
  - 3.1. Add Forecast Profile ..... 13
    - 3.1.1. Profile Name..... 14
    - 3.1.2. Description ..... 14
    - 3.1.3. Forecast..... 14
      - 3.1.3.1. Volume Only ..... 14
      - 3.1.3.2. Average Service Time Only ..... 14
      - 3.1.3.3. Both..... 14
    - 3.1.4. Forecast Model..... 14
      - 3.1.4.1. Best Pick..... 15
      - 3.1.4.2. Exponential Smoothing ..... 15
      - 3.1.4.3. Box Jenkins (ARIMA) ..... 15
      - 3.1.4.4. Multilinear Seasonal Regression ..... 15
    - 3.1.5. Forecast Method..... 15
      - 3.1.5.1. By Day of Week..... 15
      - 3.1.5.2. By Whole Time Series..... 15
    - 3.1.6. Analyze Data in Buckets of ..... 16
    - 3.1.7. Generate Forecasts in Buckets of ..... 16
    - 3.1.8. Period Ratio Analysis Interval ..... 16
    - 3.1.9. Seasonality..... 16
      - 3.1.9.1. No Seasonality ..... 16
      - 3.1.9.2. Daily Over a Week ..... 16
      - 3.1.9.3. Daily Over a Month ..... 16

3.1.9.4. Daily Over a Quarter .....	16
3.1.9.5. Daily Over a Year.....	16
3.1.9.6. Weekly Over a Month .....	16
3.1.9.7. Weekly Over a Quarter .....	17
3.1.9.8. Weekly Over a Year.....	17
3.1.9.9. Monthly Over a Quarter .....	17
3.1.9.10. Monthly Over a Year.....	17
3.1.9.11. Quarterly Over a Year.....	17
3.1.10. Eliminate Outliers .....	17
3.1.11. Outlier Threshold.....	17
3.1.12. Adjustment Factor .....	17
3.1.13. Estimate Missing Data (Daily) .....	17
3.1.14. Hold-out Periods.....	17
3.2. Edit Forecast Profile .....	18
3.3. Delete Forecast Profile .....	18
4. Outbound Profiles .....	19
4.1. Add Outbound Profile .....	20
4.1.1. Profile Name.....	20
4.1.2. Description.....	21
4.1.3. Records in List .....	21
4.1.4. Average Service Time .....	21
4.1.5. Volume Adjustment % .....	21
4.1.6. AHT Adjustment %.....	21
4.1.7. Wrong Party Connect Percentage to Include .....	21
4.1.8. Environment.....	21
4.1.9. Contact Group .....	21
4.1.10. Start Date .....	22
4.1.11. End Date .....	22
4.2. Edit Outbound Profile .....	22
4.3. Delete Outbound Profile .....	22
5. New Forecast Run.....	23
5.1. New Forecast .....	23
5.1.1. Environment Selection .....	23
5.1.2. Profile Selection .....	24
5.1.3. Description.....	24
5.1.4. History Start Date .....	24
5.1.5. History End Date.....	24
5.1.6. Horizon Start Date .....	24

5.1.7. Horizon End Date .....	24
5.1.8. Rolling Forecasts .....	24
5.1.9. Advanced .....	25
5.2. Submit New Forecast .....	26
6. Manage Forecasts .....	27
6.1. Manage Forecast Runs .....	27
6.1.1. Forecasts in Queued Status .....	27
6.1.2. Forecasts in Running Status .....	28
6.1.3. Forecasts in Completed Status .....	29
6.1.3.1. Run a Completed Forecast .....	29
6.1.3.2. Delete a Completed Forecast .....	29
6.1.3.3. View Forecasts .....	29
6.1.3.3.1. View Forecasts .....	29
6.1.3.3.2. Download Forecast Results .....	30
6.1.3.3.3. Graph Forecast Results .....	31
6.1.3.3.4. View Detailed Statistics .....	32
6.1.3.3.5. Download Detailed Statistics .....	38
6.2. Forecast Summary .....	38
6.3. Delete a Completed Forecast Run .....	39
6.4. Publish a Forecast Run .....	39
6.5. What-If Comparison .....	40
7. Forecast Accuracy Report .....	41
7.1. Accuracy Parameters .....	41
7.2. Download Data .....	42
8. Special Event Profiles .....	44
8.1. Manage Special Event Profiles .....	44
8.2. Add Special Event Profile .....	44
8.3. Edit Special Event Profile .....	45
8.4. Delete Special Event Profile .....	45
9. Data Management .....	46
9.1. Streams .....	46
9.1.1. Stream Data .....	46
9.1.1.1. View Stream Data .....	47
9.1.1.2. Edit Stream Data .....	47
9.1.1.3. Graph Stream Data .....	48
9.1.2. Upload Stream Data .....	49
9.1.2.1. Create Stream Data Import Format .....	49
9.1.2.2. Edit Stream Data Import Format .....	50
9.1.2.3. Upload Stream Data .....	50

9.2. Special Events .....	51
9.2.1. Manage Special Events.....	51
9.2.1.1. Add New Special Event .....	51
9.2.1.2. Edit Special Event .....	52
9.2.1.3. Delete Special Event .....	52
9.2.2. Update Special Events Data.....	52

# 1. Overview

---

The WFM v2 Forecaster Website, which will be referred to simply as the Website, is the user interface providing access to all of its functionality. Its basic function is to allow users to submit forecasting requests to the WFM v2 Workforce Management (WFM) Portal, to manage those requests, and to view the output (forecasts and other data) from the WFM v2 Portal.

This User Manual is organized by Website feature. The privileges of each user class are defined within the outline for each feature.

## 1.1. Browser Requirements

Refer to online help for the inContact WFO suite (including inContact WFM v2) for current browser support. In addition, cookies must be enabled for the application's authentication to function properly.

## 2. Home Page Features

---

The *Home* page, which is displayed by default upon first access to the Website, is shown in Figure 2.1. When a user first accesses the Website, the *Home* page contains the Login module, and other public modules.



**Figure 2.1 – Home Page With Login Module**

### 2.1. Login

A user can gain access to the secure portions of the Website by logging in using the *Account Login* module located on the left side of the *Home* page. Checking the *Remember Login* check box will cause the user name to be populated automatically the next time the user accesses the Account Login module from the same workstation. To access the secure content in the Website, a user must enter his or her user name into the *Username* box, and password into the *Password* box, and press the *Login* button. A message will be displayed in the Account Login module if the user is unable to login. Login may fail for the following reasons:

- The user name or the password is incorrect. Please verify both the user name and the password. For security reasons, the system will not inform a user whether the

user name or password is invalid, just that login has failed. If a user has forgotten his or her password, an administrator can reset the password to a new value.

- An Administrator has temporarily closed the site. In this case, the message will provide the cause of the failure to login.
- A system error is preventing logging in. If multiple attempts have been made to login, including having an administrator reset the user's password, or several users are not able to login, there may be a system error. This is an unlikely event, and would most likely be related to an incorrect installation or configuration, or a physical problem with one or more of the servers (for instance, a power failure). Contact an administrator or other support person if this happens.

The features available to a user after logging in to the Website depend on the class or access level of the user. These include the items that appear in the drop-down menu bar. Additional sections below describe the features available through these menu items.

Once a user has successfully been authenticated and logged into the Website, the *Home* Page will reappear, with additional modules enabled, as in Figure 2.2.





**Figure 2.2 – Home Page For Authenticated Users**

## 2.2. Discussions

The *Discussions* module permits users to submit messages to a discussion forum. The current threads of discussion are displayed in the *Discussions* module as links. Clicking on the plus sign to the left of the discussion subject opens that thread of discussion and displays any responses. Clicking on the New Thread link will open a new discussion as shown in Figure 2.3.



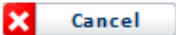

## Discussions

	Thread / Thread Starter	Last Post
	<a href="#">Sample Discussion</a> Sean Lensborn	05/23/2005 03:58:13 by Sean Lensborn
	<a href="#">Testing Discussions</a> Sean Lensborn	11/30/2005 02:20:06 by Test User

1

Title:

Message:



**Figure 2.3 – Add a New Topic**

Clicking on the subject of a message will display the content of that message, as shown in Figure 2.4.

**Discussions**

Title:

Message:

**Figure 2.4 – Content of Discussion Message**

Selecting the *Cancel* link returns the browser to the *Home* page. Selecting the *Reply* link allows the user to create a response to the message, which will be in the same discussion thread as the original message.

Selecting the *Post New Discussion Item* link allows the user to submit a message to a new discussion thread. Other users will then be able to reply to that thread.

### 2.3. Announcements

The *Announcements* module allows the user to post general announcements that all users can read as shown in Figure 2.5. These announcements are similar to discussion messages. However, they can be configured to expire automatically by a certain date. To add a new announcement, click on the *Add Announcement* link and enter the appropriate information as shown in figure 2.6.

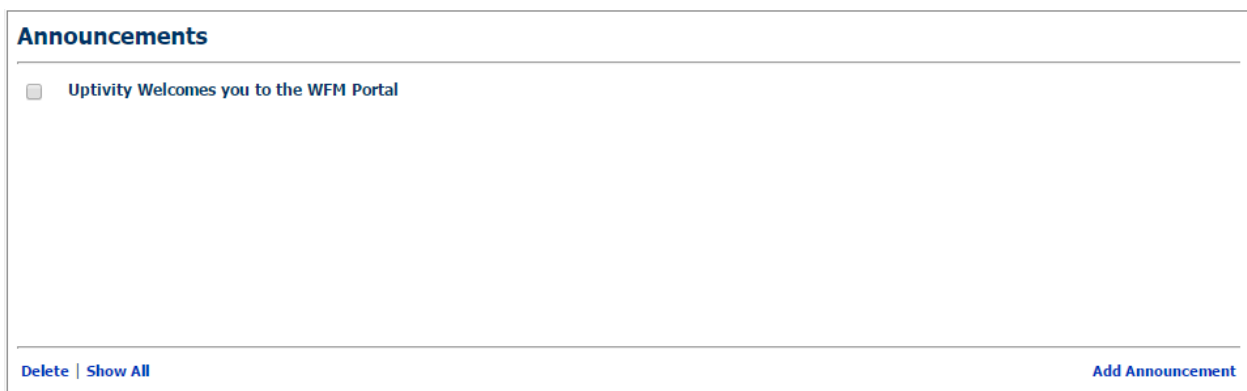


Figure 2.5 – Announcements Section

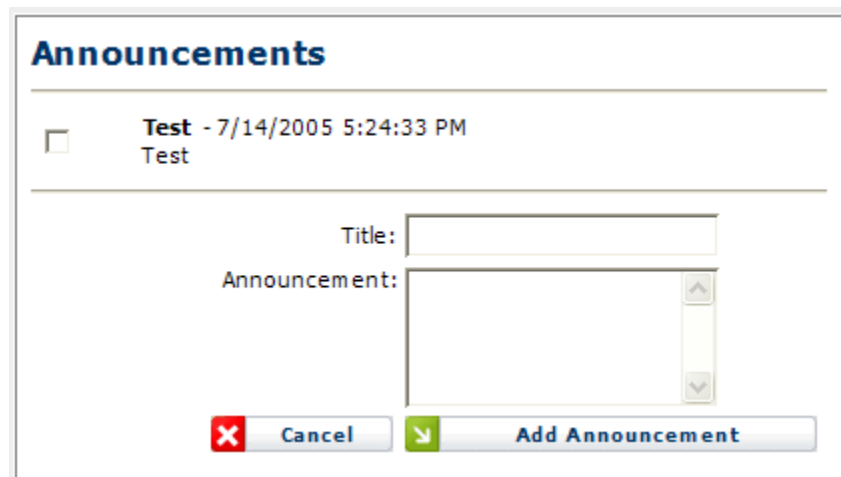


Figure 2.6 – Add a New Announcement

### 2.4. Contacts

The *Contacts* module allows the user to add contact information that is shared by all users of the site. This is simply a convenient common place that users can collect names with

email addresses and telephone numbers. To add a new contact, click on the *Add Contact* link and enter the appropriate information as shown in figure 2.6.



The screenshot shows a web interface titled "Contacts". At the top, there is a table with the following data:

Name	Role	Email	Primary Phone	Mobile Phone
<input type="checkbox"/> Uptivity Support	Support	support@uptivity.com	888-922-5526, option 2	888-922-5526, option 2

Below the table is a form for adding a new contact with the following fields:

- First Name:
- Last Name:
- Role:
- Email:
- Primary Phone:
- Mobile Phone:

At the bottom of the form are two buttons: "Cancel" (with a red 'X' icon) and "Add Contact" (with a green checkmark icon).

**Figure 2.7 – Add New Contact Information.**

## 2.5. Links

The *Links* module allows users to add useful hyperlinks, for display on the *Home* page, that are shared by all users of the site. To add a new link, click on *Add Link* and enter the appropriate information.



The screenshot shows a web interface titled "Links". At the top, there is a table with the following data:

Name
<input type="checkbox"/> inContact

Below the table is a form for adding a new link with the following fields:

- Link Title:
- Link URL:

At the bottom of the form are two buttons: "Cancel" (with a red 'X' icon) and "Add Link" (with a green checkmark icon).

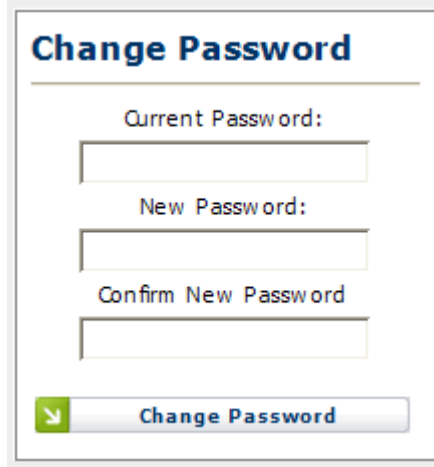
**Figure 2.8 – Add New Link**

## 2.6. Events

The *Events* module displays the calendar for the current month, and allows users to post events to appear in that calendar. The user can scroll to the next or previous months by clicking on the arrows on either side of the month name in the calendar heading. To add an event, click on *Add New Event* and enter the appropriate information.

## 2.7. Change Password

The *Change Password* module enables the user to change his or her password. To select a new password, first, enter the existing password in the *Current Password* field. Next, enter the new password in the *New Password* field, and again in the *Confirm New Password* field. A message will appear in the *Change Password* module to either confirm that the password has been changed successfully, or to notify the user of the reason for the password not being changed. The password change may be unsuccessful if the current password does not match the password in the database, the new password is blank, or the new password and the confirm password do not match.



The image shows a web form titled "Change Password". It contains three input fields: "Current Password:", "New Password:", and "Confirm New Password:". Below the fields is a button labeled "Change Password" with a green arrow icon on the left.

**Figure 2.9 – Change Password**

To change the password of another user, a user with Administrator access level must use the *Manage Users* page.

## 2.8. Logout

The *Logout* link appears not only on the *Home* page, but also on all pages, regardless of the access level of the user as shown in Figure 2.10. A user's authenticated session begins when he or she logs in to the site. This authenticated session ends when the user selects the *Logout* link. Closing the browser without logging off also ends the session, but is not the preferred method. Session authentication control in the Website is supported by encrypted HTTP cookies. These cookies are configured to expire when the browser is closed. When a user selects the *Logout* link, however, these cookies are programmatically deleted, which is the most reliable way to ensure that they do not last beyond the user's session.



**Figure 2.10 – Logout**

### 3. Forecast Profiles

A Profile is a set of configuration options for generating forecasts. A user may create multiple profiles, each storing a different configuration, and use them to generate forecasts for any environment. A profile is a convenient way for a user to set up a particular configuration once and then use that configuration to generate forecasts. Using profiles, the user does not have to enter all configuration parameters for each forecast generation.

Users that have an Administrator, Manager, or Forecaster access level can create, edit, and delete profiles. Users with the Viewer access level can view the details of profiles associated with generated forecasts for the environments assigned to them, but cannot create their own profiles, or edit or delete profiles. All users can view the details of a profile by clicking the link in the Manage forecasts profile page.

For users with Administrator Manager, or Forecaster access level, the *Forecast Profiles* link appears in the Planning-Forecaster-Profiles drop-down menu. To view the *Manage Forecast Profile* module, click on the *Forecast Profiles* menu choice. By default, the Manage Forecast Profile module displays the list of profiles that the user has configured. This page should appear similar to as shown in Figure 3.1.

The screenshot displays the 'Manage Forecast Profiles' interface. At the top, there is a title 'Manage Forecast Profiles'. Below it is a table with the following columns: Profile, Description, User, Created, Modified, and Action. The table contains seven rows of profile data. Below the table is a 'Back' button. At the bottom of the interface is a form titled 'Add New Forecast Profile' with two input fields: 'Name:' and 'Description:', and an 'Add Profile' button.

Profile	Description	User	Created	Modified	Action
<a href="#">1 Hour Buckets</a>	Profile with 1 Hour Buckets	admin, admin	8/9/2005 2:24 PM	3/31/2006 3:22 PM	
<a href="#">1_cont_vol</a>	contact volume	admin, admin	5/8/2006 11:38 AM	5/8/2006 11:38 AM	
<a href="#">1_daily by interval</a>	1_daily by interval	User, Test	1/19/2006 2:14 PM	1/19/2006 2:14 PM	
<a href="#">1_Week over month</a>	1_Weekly	User, Test	1/12/2006 6:23 PM	1/17/2006 1:36 PM	
<a href="#">15 Minute Profile</a>	Profile with Small Bucket	User, Test	7/6/2005 6:38 PM	10/23/2005 2:35 PM	
<a href="#">30 Minute Profile</a>	30 Minute Buckets	User, Test	8/9/2005 2:16 PM	1/30/2006 1:13 PM	
<a href="#">weekly regression</a>	weekly buckets - regression	User, Test	8/16/2005 11:31 AM	10/13/2005 2:03 PM	

[← Back](#)

**Add New Forecast Profile**

Name:  Description:  [Add Profile](#)

Figure 3.1 – Profile Manager

#### 3.1. Add Forecast Profile

The user can create a new profile by entering a name and a description for the new profile and then selecting the *Add Profile* button. If there is an error in creating the profile, a message will be displayed above the entry fields. If the profile is successfully created, then it will be opened immediately in the edit mode, as shown in Figure 3.2. Upon returning to the *Profile Manager*, the new profile will appear in the profiles list.

**Figure 3.2 – New Forecast Profile**

### 3.1.1. Profile Name

The user must enter a profile name that identifies this profile.

### 3.1.2. Description

The user must enter a brief profile description.

### 3.1.3. Forecast

Quantitative forecasting models are used to forecast call volumes and handling times. The user can choose to forecast call volume or handling times or both.

#### 3.1.3.1. Volume Only

When this option is selected, only forecasts of contact volumes are generated.

#### 3.1.3.2. Average Service Time Only

When this option is selected, only forecasts of average service times are generated.

#### 3.1.3.3. Both

When this option is selected, forecasts of both contact volumes and average service times are generated.

### 3.1.4. Forecast Model

The following forecasting models and expert system are available:

- Best Pick
- Exponential Smoothing (10 versions)
- Box-Jenkins ARIMA
- Multilinear Seasonal Regression

The user can choose one of the following forecasting options.

#### **3.1.4.1. Best Pick**

Best Pick is the expert selection system used by the Forecaster to evaluate the Exponential Smoothing and Box-Jenkins ARIMA models provided to determine i) the structure and parameters for these models, ii) compare their accuracies, and iii) select the one that has the highest accuracy to generate forecasts. The Best Pick is the default option for the Forecasting Model.

#### **3.1.4.2. Exponential Smoothing**

Exponential Smoothing uses the average of historical data with exponentially decreasing multipliers. In its seasonal version, the Exponential Smoothing model uses three related equations for level, trend and seasonality as the basis for a forecast. The Forecaster provides simple, double and triple Exponential Smoothing with 10 different configurations: multiplicative, additive, and no seasonality together with linear, damped, exponential, and no trend.

#### **3.1.4.3. Box Jenkins (ARIMA)**

Time series components used in the Box-Jenkins methodology are autoregressive (AR) and moving averages (MA) of errors. They are commonly called ARIMA (Auto Regressive Integrated Moving Average) models. ARIMA models use either past values (the autoregressive model), past errors (the moving average model) or combinations of the past values and past errors (the ARIMA model). The Box-Jenkins method is well suited to handle complex time series and other forecasting situations in which the basic pattern is not readily apparent. It uses an iterative approach to identify a useful model from a general class of models. The chosen model is then checked against the actual data to see if it accurately describes the series. If the model does not fit well, the process is repeated until the most accurate model is found.

#### **3.1.4.4. Multilinear Seasonal Regression**

Multilinear Seasonal Regression is generally used to model the trend and seasonality in a data set. The model uses dummy variables in a multiple linear regression model for seasonal effects. Thus, Multilinear Seasonal Regression treats seasonal effects as additive rather than multiplicative.

### **3.1.5. Forecast Method**

The user can choose a forecast method from one of the following options: By Day of Week, or By Whole Time Series.

#### **3.1.5.1. By Day of Week**

With this method, forecasts are based on the days of the week. When this option is selected, contact volumes and service times for the past Mondays are used for forecasting contact volumes and service times for future Mondays, contact volumes and service times for the past Tuesdays are used for forecasting contact volumes and service times for future Tuesdays, and so on. The By Day of Week forecast method is the default choice for the forecast method.

#### **3.1.5.2. By Whole Time Series**

This method analyzes the entire time series together for forecasting over the forecast horizon.

### **3.1.6. Analyze Data in Buckets of**

The user may choose an aggregate bucket size from the drop-down list, with values that range from 1 day to 1 year. The selected bucket size is used to aggregate the actual data for analysis.

### **3.1.7. Generate Forecasts in Buckets of**

The user may choose an aggregate bucket size from the drop-down list, with values that range from 15 minutes to the bucket size used to aggregate the actual data. Forecasts are generated and stored in the bucket size selected.

### **3.1.8. Period Ratio Analysis Interval**

The user may choose the period of history to use when determining ratios for Interval Forecasting. The default setting is the most recent 4 week period. You can change this to anywhere from 1 – 4 weeks of recent history. You may also select a period of time in the previous year (1-4 weeks), or use the entire history available.

### **3.1.9. Seasonality**

Seasonality represents a periodic pattern of behavior in a time series, like the repeating pattern over the days of a week. The Forecaster must take seasonality explicitly into account during the model fitting process. When a particular seasonality pattern is selected, a bucket size that is smaller than the seasonality pattern value must be selected. Following are the options available for the seasonality.

#### **3.1.9.1. No Seasonality**

When the no seasonality option is selected, forecasts are generated without taking into consideration any seasonal pattern that may exist in the data.

#### **3.1.9.2. Daily Over a Week**

When the Daily Over a Week seasonality is selected, the daily periodic pattern over a week is included in generating forecasts.

#### **3.1.9.3. Daily Over a Month**

When the Daily Over a Month seasonality is selected, the daily periodic pattern over a month is included in generating forecasts.

#### **3.1.9.4. Daily Over a Quarter**

When the Daily Over a Quarter seasonality is selected, the daily periodic pattern over a quarter is included in generating forecasts.

#### **3.1.9.5. Daily Over a Year**

When the Daily Over a Year seasonality is selected, the daily periodic pattern over a year is included in generating forecasts.

#### **3.1.9.6. Weekly Over a Month**

When the user chooses Weekly Over a Month seasonality, the weekly periodic pattern over a month is included in generating forecasts.



#### **3.1.9.7. Weekly Over a Quarter**

When the user chooses Weekly Over a Quarter seasonality, the weekly periodic pattern over a quarter is included in generating forecasts.

#### **3.1.9.8. Weekly Over a Year**

When the user chooses Weekly Over a Year seasonality, the weekly periodic pattern over a year is included in generating forecasts.

#### **3.1.9.9. Monthly Over a Quarter**

When the user chooses Monthly Over a Quarter seasonality, the monthly periodic pattern over a quarter is included in generating forecasts.

#### **3.1.9.10. Monthly Over a Year**

When the user chooses Monthly Over a Year seasonality, the monthly periodic pattern over a year is included in generating forecasts.

#### **3.1.9.11. Quarterly Over a Year**

When the user chooses Quarterly Over a Year seasonality, the quarterly periodic pattern over a year is included in generating forecasts.

### **3.1.10. Eliminate Outliers**

When the Eliminate Outliers box is checked, any extreme value in the actual data is "smoothed out" by replacing it with an expected value.

### **3.1.11. Outlier Threshold**

The Outlier Threshold specifies the maximum deviation from the mean, in standard deviation units, that should be considered normal in the actual data. Any actual value deviating from the mean by more than the threshold value is identified as an outlier.

### **3.1.12. Adjustment Factor**

This value is used to inflate or deflate contact volume values for the entire history. The default value is 0%, which will leave the history unchanged.

### **3.1.13. Estimate Missing Data (Daily)**

The value defaults to Yes. If the user chooses to set this to No, stream history will be used as is in the database. When set to Yes an algorithm is applied to the stream history to determine gaps in actual values for non-event days. The algorithm estimates missing data for days which have a value less than or equal to the user specified *Volume Threshold* and *Service Time Threshold* values. The data is estimated based on the data of other non-even days that are of the same weekday and have valid data.

### **3.1.14. Hold-out Periods**

The Hold-out Period setting in a forecast profile is specifying the test period that the Best Pick Forecast Model uses to compare the Exponential Smoothing and Box-Jenkins ARIMA models in choosing a model to use for forecasting. When it is set to 4 weeks, Best Pick

sets aside historical data from the most recent 4 weeks to compare forecast accuracy of alternative models before choosing the best one.

### 3.2. Edit Forecast Profile

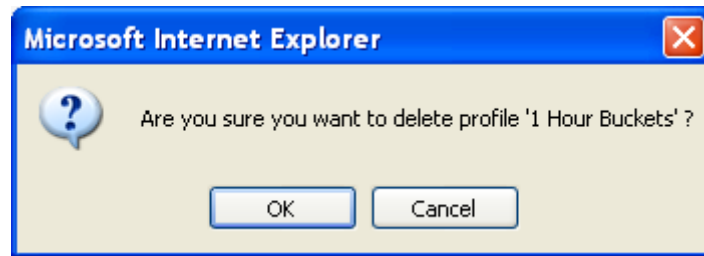
The user can edit a profile by clicking on the *Forecast Profiles* menu item under the *Planning-Forecaster* tab. In the *Manage Forecast Profiles* page, the user has an option to edit any of the profiles by clicking the *Edit* icon button under the Action Menu. By clicking the *Edit* icon button next to the profile to be edited, the user can reach the *Edit Forecast Profile* page to change parameter settings as shown in Figure 3.3.

**Figure 3.3 – Edit Forecast Profile**

To save changes made to a profile, click on the *Update* button. There are a number of reasons that updating a profile may not succeed. If invalid values or contradictory settings are specified by the user, one or more messages located near the incorrect values will appear, asking the user to correct these values and resubmit the update. Also, editing a profile while it is being used to generate forecasts is not allowed.

### 3.3. Delete Forecast Profile

A profile can be deleted by clicking on the *Delete* icon button for that particular forecast profile, as shown in Figure 3.1. A pop up page will display to confirm the delete option as shown in Figure 3.4. A forecast profile used in a forecast run that is either being processed at the moment or in the queued state cannot be deleted.



**Figure 3.4 – Delete Forecast Profile Confirmation**

## 4. Outbound Profiles

---

An Outbound Profile is a set of configuration options for generating outbound or upstream forecasts. These profiles can be used to approximate outbound call volumes or to generate new stream data. Like Forecast Profiles, a user may create multiple profiles, each storing a different configuration, and use them to generate forecasts for any environment. A profile is a convenient way for a user to set up a particular configuration once and then use that configuration to generate outbound forecasts. Using profiles, the user does not have to enter all configuration parameters for each forecast generation.

Users that have an Administrator, Manager, or Forecaster access level can create, edit, and delete outbound profiles. Users with the Viewer access level can view the details of profiles associated with generated forecasts for the environments assigned to them, but cannot create their own profiles, or edit or delete profiles. All users can view the details of a profile by clicking the link in the Manage Outbound Profiles page.

For users with Administrator, Manager, or Forecaster access level, the *Outbound Profiles* link appears in the *Planning-Forecaster-Profiles* drop-down menu. To view the *Manage Outbound Profile* module, click on the *Outbound Profiles* menu choice. By default, the Manage Outbound Profile module displays the list of profiles that the user has configured. This page should appear similar to as shown in Figure 4.1.

Manage Outbound Profiles						
Profile	Description	User	Created	Modified	Action	
TA reach even dist + WPC%	TA reach even dist + WPC%	admin, admin	4/5/2014 12:10 PM	4/8/2014 11:25 AM		
TA reach history	TA reach history	admin, admin	4/5/2014 12:09 PM	4/8/2014 11:25 AM		
TA reach history + WPC%	TA reach history + WPC%	admin, admin	4/5/2014 12:10 PM	4/8/2014 11:25 AM		
TA billing even dist + WPC%	TA billing even dist + WPC%	admin, admin	4/5/2014 12:00 PM	4/8/2014 11:25 AM		
TA billing history	TA billing history	admin, admin	4/5/2014 12:03 PM	4/10/2014 3:46 PM		
TA billing history + WPC%	TA billing history + WPC%	admin, admin	4/5/2014 12:04 PM	4/8/2014 11:25 AM		
BFA Outbound	BFA Outbound	admin, admin	2/28/2014 10:55 AM	4/10/2014 3:52 PM		
BFA3 20% Volume Adj 10 % AHT Adj	BFA3 20% Volume Adj 10 % AHT Adj	admin, admin	4/10/2014 1:14 PM	4/10/2014 1:16 PM		
BFA2 Outbound Connect	BFA2 Outbound Connect	admin, admin	4/10/2014 2:10 PM	4/10/2014 2:21 PM		
BFA2 Outbound 25%WPC	BFA2 Outbound 25%WPC	admin, admin	4/10/2014 1:30 PM	4/10/2014 1:37 PM		
CL Billing AHT 28800	CL Billing AHT 28800	admin, admin	8/21/2014 3:36 PM	8/21/2014 3:53 PM		
CL Outbound Billing	CL Outbound Billing	admin, admin	2/5/2015 4:23 PM	2/5/2015 4:54 PM		
CL Outbound Reach	CL Outbound Reach	admin, admin	2/5/2015 4:51 PM	2/5/2015 4:54 PM		
CL Outbound Retention	CL Outbound Retention	admin, admin	2/5/2015 4:53 PM	2/5/2015 4:54 PM		
Demo	Demo	admin, admin	5/13/2014 2:13 PM	5/13/2014 2:16 PM		
Just Billing 24116	Billing outbound	admin, admin	3/27/2014 4:41 PM	4/8/2014 11:45 AM		
Just outbound	Just outbound	admin, admin	3/27/2014 3:18 PM	3/27/2014 3:20 PM		
Just reach 13500	reach outbound	admin, admin	3/27/2014 4:44 PM	4/8/2014 11:46 AM		
Just retention 8000	retention outbound	admin, admin	3/27/2014 4:45 PM	4/8/2014 11:46 AM		
Just retention 80000	Just retention 80000	admin, admin	4/8/2014 12:09 PM	4/8/2014 12:09 PM		
MACP Outbound	MACP Outbound	admin, admin	3/26/2015 11:51 AM	3/26/2015 11:52 AM		
OB Right Party	OB Right Party	admin, admin	3/25/2014 5:26 PM	3/25/2014 5:42 PM		
Outbound	Outbound	admin, admin	11/16/2009 10:54 AM	2/24/2014 1:47 PM		

Figure 4.1

## 4.1. Add Outbound Profile

The user can create a new profile by entering a name and a description for the new profile and then selecting the *Add Profile* button. If there is an error in creating the profile, a message will be displayed above the entry fields. If the profile is successfully created, then it will be opened immediately in the edit mode, as shown in Figure 4.2. Upon returning to the *Profile Manager*, the new profile will appear in the profiles list.

Edit Outbound Profile	
<input type="button" value="Save Profile"/> <input type="button" value="Cancel"/>	
User: Acharya, Akash Profile: Outbound Description: Outbound	Date Created: 11/16/2009 10:54 AM Date Modified: 2/24/2014 01:47 PM
<b>Campaign Parameters</b>	
Records In List:	249090
Average Service Time:	300 sec
Volume Adjustment %:	0.00
AHT Adjustment %:	0.00
WPC % To Include:	75.00
Generate Forecasts in Buckets Of:	30 Minutes
<b>Contact Group Basis</b>	
Environment:	HR2 Inbound-Outbound
Contact Group:	Even Distribution
Start Date:	11/09/2009
End Date:	11/16/2009
Connect Type:	Right Party Connect

Figure 4.2

### 4.1.1. Profile Name

The user must enter a profile name that identifies this profile.

### **4.1.2. Description**

The user must enter a brief profile description.

### **4.1.3. Records in List**

This value represents the number of customer records in the calling list. A calling list is a file containing customer records. If a record selection filter is used in a campaign, then this value should be set to the number of customers to be called based on the selection filter.

### **4.1.4. Average Service Time**

This value represents the daily average service time over the Horizon to be forecasted. It is adjusted to reflect the variation seen in average service times during a day to generate interval level forecasts.

### **4.1.5. Volume Adjustment %**

This value controls the change to the Records in List value. It can be a negative or positive number between 0 and 100. The value is stored as a percentage. For example, if the Records in List value is 100,000 and the Volume Adjustment % is set to 25%, the total volume forecast over the horizon specified in a forecast run will be 125,000.

### **4.1.6. AHT Adjustment %**

This value controls the change to the Average Service Time. This can be a negative or positive number between 0 and 100. The value is stored as a percentage. For example, if the Average Service Time is 250 seconds and the AHT Adjustment % is set to 5%, the daily average service time will be 262.50 seconds.

### **4.1.7. Wrong Party Connect Percentage to Include**

A certain percentage of calls are expected to be answered but not by the intended parties. These calls are called Wrong Party Connect calls. This value controls the Wrong Party Connect Percentage to include in the forecasts since agents will need to handle these calls as well. It is a positive percentage between 0 and 100%. For example, if 30,000 Wrong party Connect calls and 100,000 Right Party Connect calls were made between 1/1/2013 and 2/1/2013, the Wrong Party Connect rate is 30%. If it is set to 75%, 75% of the Wrong Party Connect percentage observed between the Start Date and End Date, that is 30%, will be included in the forecasts.

### **4.1.8. Environment**

This is a drop-down for selecting an Environment. Select the Environment of the Stream you would like to use in the outbound modeling.

### **4.1.9. Contact Group**

Select the Contact Group you would like to use for the outbound modeling. The day of week, and interval volume and service time patterns will be used from this Contact Group and applied to the Records in List and Average Service Time. Select a Contact Group which closely models the interval patterns you would like to achieve.

If Even Distribution is selected as the Contact Group, the Records in List will be evenly distributed at both the daily and interval levels. The Average Handling time will remain constant with the Even Distribution selection.

#### 4.1.10. Start Date

The Start Date field sets the beginning of the History to use for daily and interval modeling.

#### 4.1.11. End Date

The End Date field sets the end of the History to use for daily interval modeling.

### 4.2. Edit Outbound Profile

The user can edit a profile by clicking on the *Outbound Profiles* menu item under the *Planning-Forecaster* tab. In the *Manage Outbound Profiles* page, the user has an option to edit any of the profiles by clicking the *Edit* icon button under the Action Menu. By clicking the *Edit* icon button next to the profile to be edited, the user can reach the *Edit Outbound Profile* page to change parameter settings as shown in Figure 4.3.

User: Acharya, Akash		Date Created: 11/16/2009 10:54 AM	
Profile:	Outbound	Date Modified:	2/24/2014 01:47 PM
Description:	Outbound		
Campaign Parameters		Contact Group Basis	
Records In List:	245090	Environment:	HRZ Inbound-Outbound
Average Service Time:	359 sec	Contact Group:	Even Distribution
Volume Adjustment %:	0.00	Start Date:	11/09/2009
AHT Adjustment %:	0.00	End Date:	11/16/2009
WPC % To Include:	75.00	Contact Type:	Right Party Connect
Generate Forecasts in Buckets Of:	30 Minutes		

Figure 4.3

To save changes made to a profile, click on the *Update* button. There are a number of reasons that updating a profile may not succeed. If invalid values or contradictory settings are specified by the user, one or more messages located near the incorrect values will appear, asking the user to correct these values and resubmit the update. Also, editing a profile while it is being used to generate forecasts is not allowed.

### 4.3. Delete Outbound Profile

A profile can be deleted by clicking on the *Delete* icon button for that particular forecast profile, as shown in Figure 4.1. A pop up page will display to confirm the delete option as shown in Figure 4.4. An Outbound profile used in a forecast run that is either being processed at the moment or in the queued state cannot be deleted.



**Figure 4.4**

## 5. New Forecast Run

---

### 5.1. New Forecast

When a user selects the *New Forecast* menu item, the *New Forecast Run* module will be displayed, as in Figure 5.1. This feature is not available for users with Viewer access level.

**Figure 5.1 – New Forecast Run**

#### 5.1.1. Environment Selection

The *Select Environments* box allows the user to select an environment for which to generate forecasts. If there are multiple environments assigned to the user, a drop-down box with all of the user's assigned environments will be displayed. If the user is assigned only one environment, that environment will be selected by default.

### **5.1.2. Profile Selection**

A forecast profile is required in order to submit a new forecast run. All profiles that a user has created will appear in the *Forecast Profile* drop-down box. The user may select any of the profiles from this list to use for the forecasting request. See **Section 3** for information about profiles. Profiles are not dependent on a specific environment. If the user has no profiles available, then a message will be displayed indicating that the user will not be able to submit Forecasting requests.

### **5.1.3. Description**

The user may enter a short description for the forecasting request into the Description field. This field must not be left blank. It is for the user's informational use, and can be used to identify and distinguish individual forecasting requests.

### **5.1.4. History Start Date**

Call volume data with a date on or after the history start date is considered for generating forecasts of the future call volumes. The history start date must be a Monday. If the user does not specify a history start date, the earliest Monday for which data is available in the database is the default date and used for forecast generation.

### **5.1.5. History End Date**

Call volume data with a date on or before the history end date is considered for generating forecasts of the future call volumes. The history end date must be a Sunday if the start day for a week is Monday. If the user does not specify a history end date, the latest Sunday for which data is available in the database is the default date and used for forecast generation.

### **5.1.6. Horizon Start Date**

Forecasts are generated between the horizon start date and horizon end date selected by the user. The horizon start date must be a Monday if the start day for a week is set to Monday. If the user does not specify a horizon start date, the first Monday after the latest Sunday for which data is available in the database is the default date and used as the default horizon start date.

### **5.1.7. Horizon End Date**

Forecasts are generated between the horizon start date and horizon end date selected by the user. The horizon end date must be a Sunday. If the user does not specify a horizon end date, it is set to the default end date, which is four weeks after the horizon start date.

### **5.1.8. Rolling Forecasts**

Rolling forecasts are used to run consecutive forecasts with the same profile over a designated period of time. Clicking the *Rolling Forecasts* link will provide the user with additional input parameters, as shown in Figure 5.2.



The screenshot shows a 'New Forecast Run' dialog box with the following configuration:

- Select Environment: Model 1
- Description: (empty)
- Forecast Profile: BP/D-30 SD2.50 NoMissing
- Special Events Profile: None
- History Start Date: 1/7/2008
- History End Date: 10/11/2015
- Horizon Start Date: 10/12/2015
- Horizon End Date: 11/8/2015
- Rolling Period: 4 Weeks
- Horizon Period: 4 Weeks

Buttons: Cancel, Submit New Forecast Run. Link: Hide Rolling Forecasts.

**Figure 5.2 – Rolling Forecasts**

The Rolling Period defines the number of weeks to run this Profile. If “12 weeks” is selected, the profile will be run 12 times, shifting the history end and horizon start dates ahead by 1 week on each consecutive run.

The Horizon Period is the number of weeks out to forecast. If “4 weeks” is selected, the Horizon End Date will be 28 days after the Horizon Start Date.

*Caution: The Rolling Period specifies the number of forecast runs. If 12 weeks is selected, 12 independent forecast runs will be completed and appear in the Manage Forecasts page.*

### 5.1.9. Advanced

The *Advanced Forecasting* page provides the user with control over the Forecast Profile, Special Event Profile, History and Horizon Start and End Dates for each Stream in an Environment. As shown in Figure 5.3, the user can select these profiles for each stream. This allows for precise configuration over a given Environment. If the user wishes to exclude a stream from a forecast run, the *Exclude* link for the stream is used to remove it from the *Advanced Forecasting* page. No forecasts will be generated for the excluded streams. The advanced option also makes available the selection of Outbound Profiles for Outbound Streams.

*Note: If the selected Environment contains any Outbound Contact Groups, the Advanced Forecasting Page will be displayed by default. The Forecast drop-down box associated with each Outbound Contact Group will contain Outbound Profiles that will be used to generate the forecast for the respective Outbound Contact Group.*

**New Forecast Run**

Select Environment:  ▼

Description:

[Hide Advanced Settings](#)

Contact Group Configuration						
Contact Group	Profiles	History	Horizon	Minimum Forecast	Action	
.Sales	Forecast:	<input type="text" value="BP/D-30 SD2.50 NoMissing"/> <span>▼</span>	Start: <input type="text" value="01/07/2008"/>	Start: <input type="text" value="10/12/2015"/>	Volume: <input type="checkbox"/>	Exclude
	Special Events:	<input type="text" value="None"/> <span>▼</span>	End: <input type="text" value="10/11/2015"/>	End: <input type="text" value="11/08/2015"/>	Service Time: <input type="checkbox"/>	
.Support	Forecast:	<input type="text" value="BP/D-30 SD2.50 NoMissing"/> <span>▼</span>	Start: <input type="text" value="01/07/2008"/>	Start: <input type="text" value="10/12/2015"/>	Volume: <input type="checkbox"/>	Exclude
	Special Events:	<input type="text" value="None"/> <span>▼</span>	End: <input type="text" value="10/11/2015"/>	End: <input type="text" value="11/08/2015"/>	Service Time: <input type="checkbox"/>	

Apply same start and end dates to all contact groups

History       Horizon

▼

**Figure 5.3 – Advanced Forecasting**

## 5.2. Submit New Forecast

A request for Forecast generation is submitted by selecting the *Submit Run* button. A confirmation message will appear after selecting the button. Clicking on the OK button will continue processing the request. Clicking the Cancel button will close the confirmation message but not submit the request for processing. When a request is submitted for processing, the browser will be directed to the *Manage Forecast Runs* page, which is described in **Section 6**. The new Forecasting request will appear at the top of the Forecast list with a *Queued* or *Running* status.

## 6. Manage Forecasts

---

The *Manage forecasts* module, which is available to all users, presents a list of *forecasting* requests. For users with the Administrator access level, forecast requests from all users are displayed. For a user with the Viewer access level, all *forecast* requests for the environments assigned to the user are displayed. For a user with the Manager access level, *forecast* requests submitted by all users within the Manager's assigned environments are displayed. For a user with the Forecaster access level, only *forecast* requests submitted by the user are displayed. The user can manage currently running forecast requests, and view, edit and delete the results of finished forecast runs.

### 6.1. Manage Forecast Runs

The *Planning-Forecaster* menu item has two selections related to the running of forecast jobs. The first is *New Forecast*, which is described in **Section 5**, and the second is *Manage Forecast*. All users have access to the *Manage Forecast Runs* module, but only users with the Administrator, Manager, or *Forecaster* access level have access to the *New Forecast* module.

The user may get to the Manage Forecast Runs page as shown in Figure 6.1 by clicking on the *Manage Forecasts* item in the *Forecasting* Menu.

The *Manage Forecast Runs* module allows the user to monitor the progress of the Advanced Workforce Optimization Portal in processing the current Forecast request. There are a number of informational items displayed in the *Manage* module. First, forecast runs that are queued are displayed. Next, the forecast runs that are running and those that have already been processed are displayed.

#### 6.1.1. Forecasts in Queued Status

Forecast requests that are in *Queued* Status are waiting to be processed by the Advanced Workforce Optimization Portal. A request may be in a queued state because there are no instances of the Forecaster available for processing or because the environment is currently being processed by some instance of the Forecaster. When a request has queued status, the only action available to the user is the *Cancel* action. Selecting this action link will cause the request to be cancelled and removed from the queue. The status of the request will then be changed to *Cancelled*.

## Manage Forecast Runs

Manage Forecast Runs							
Delete		Filter: (All Environments)	(All)	Filter	Refresh	New Forecast Run	
Environment	Description	User	Configuration	Last Run	Status	Action	
<input type="checkbox"/>	US Operations	Generated Run 09/17-09/24	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/6/2007 11:13 AM	Storing Results	Cancel	
<input type="checkbox"/>	US Operations	Generated Run 09/17-09/24	Admin, Demo Profile: Both Weekly/BP/W-Y Events: Default Holidays	11/6/2007 11:31 AM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 09/17-09/24	Admin, Demo Profile: Both DOW/Monthly/BP/M-Y Events: Default Holidays	11/6/2007 11:30 AM	Error		
	US Operations	11/12 - 11/25	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/2/2007 02:11 PM	Official		
	US Operations	11/5 - 11/18	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/2/2007 02:04 PM	Official		
	US Operations	10/29 - 11/11	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/2/2007 01:56 PM	Official		
	US Operations	10/22 - 11/04	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/2/2007 01:49 PM	Official		
<input type="checkbox"/>	US Operations	Generated Run 10/29-11/05	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 03:03 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 10/22-10/29	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:59 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 10/15-10/22	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:56 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 10/08-10/15	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:52 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 10/01-10/08	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:48 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 09/24-10/01	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:44 PM	Completed		

Figure 6.1 – Manage Forecast Runs

### 6.1.2. Forecasts in Running Status

Forecast requests that are in *Running* status are currently being processed by the Advanced Workforce Optimization Portal. When a request is in *Running* status, the only action available to the user is the *Abort* action. Selecting this link will terminate the run and discard all information generated for the run up to that point.

## Manage Forecast Runs

Manage Forecast Runs							
Delete		Filter: (All Environments)	(All)	Filter	Refresh	New Forecast Run	
Environment	Description	User	Configuration	Last Run	Status	Action	
<input type="checkbox"/>	US Operations	Generated Run 09/17-09/24	Admin, Demo Profile: Both Weekly/BP/W-Y Events: Default Holidays	Today 05:55 PM	Queued	Cancel	
<input type="checkbox"/>	US Operations	Generated Run 09/17-09/24	Admin, Demo Profile: Both Weekly/BP/W-Y Events: Default Holidays	11/6/2007 11:31 AM	Completed		
	US Operations	11/12 - 11/25	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/2/2007 02:11 PM	Official		
	US Operations	11/5 - 11/18	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/2/2007 02:04 PM	Official		
	US Operations	10/29 - 11/11	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/2/2007 01:56 PM	Official		
	US Operations	10/22 - 11/04	Admin, Demo Profile: DOW/30 Events: Default Holidays	11/2/2007 01:49 PM	Official		
<input type="checkbox"/>	US Operations	Generated Run 10/29-11/05	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 03:03 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 10/22-10/29	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:59 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 10/15-10/22	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:56 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 10/08-10/15	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:52 PM	Completed		
<input type="checkbox"/>	US Operations	Generated Run 10/01-10/08	Admin, Demo Profile: DOW/30 Events: Default Holidays	10/26/2007 02:48 PM	Completed		

Figure 6.2 – Forecast Run

### 6.1.3. Forecasts in Completed Status

A Forecast request that has been completed successfully has three actions available. First, a new Forecast request can be created with the same configuration options. Selecting the *Run* icon button will open the *New Forecast Run* module with the same configuration options. Second, the results of the Forecast run can be viewed by clicking the *View* icon button. Finally, the Forecast request, along with its results, can be deleted.

#### 6.1.3.1. Run a Completed Forecast

To configure a new forecast request using the same configuration settings as a completed forecast request, the user can select the *Run* icon button. This will present the user with the *New Forecast Run* module, as described above, with default settings selected automatically to match the settings of the completed forecast.

#### 6.1.3.2. Delete a Completed Forecast

The user can delete a completed forecast run, or a forecast run that is in the *Error* state or in the *Aborted* state, by checking the checkbox in the first column of the forecast request row in the *Manage Forecast Runs* Page, and then clicking on the *Delete* button at the top of the column. Any data generated by the Forecaster for this forecast request is deleted, but the associated profiles are not deleted.

#### 6.1.3.3. View Forecasts

The user can view the output data for a completed forecast request by selecting the *View* icon button. Selecting this button displays the *Forecast by Contact Group* module as shown in Figure 6.3.

The *Forecast by Contact Group* module presents the aggregate forecast results data by Contact Group. Selecting the *Publish* button allows the stream forecasts to be published in this case, as described in Section 6.4.

Forecasts By Contact Group							
Refresh		Publish		Tag		Update Indicator Percent	
Environment: Model Other				Description: Interval 30 - 4/5/09			
Last Run Date: 1/20/2015 04:07 PM				Forecast By: Contact Groups			
Contact Group Name	Stream Profile	Volume		Average Service Time			
		Forecasts	Detailed Statistics	Forecasts	Detailed Statistics		
Billing_ABC	Call Stream	[Icons]	[Icons]	[Icons]	[Icons]	[Icons]	[Icons]
Retention_DR	Call Stream	[Icons]	[Icons]	[Icons]	[Icons]	[Icons]	[Icons]
Sales_PS	Call Stream	[Icons]	[Icons]	[Icons]	[Icons]	[Icons]	[Icons]

Figure 6.3 – Forecasts by Contact Group

#### 6.1.3.3.1. View Forecasts

When the *View* icon button is clicked, the Forecast results are displayed with the Contact Group name, Result type, Start and End Times for the forecasts, Forecast values and Actual values, as shown in Figure 6.4. For times periods that do not have actual values, zeros are displayed in the actual value column. Clicking the *Show Advanced* button will display the accuracy percentage, the upper and lower limit forecasts.

The forecast values can be altered by entering new values in the forecast AHT or Volume and then clicking Update. The data can be edited on an interval level or by an entire day. If an entire day is edited, each interval value will be adjusted by the same percentage as the entire day, to preserve the interval level pattern.

A Forecast Modification Factor may be applied to all of the forecasted values at once, by entering a value in the *Forecast Modification Factor* text box and clicking the *Apply Modification Factor* button.

For Forecast runs with both Volume and Average Service Time results, both AHT and Volume values will be displayed in the results table.

**Forecast Results**

Contact Group: **Billing\_ABC** Bucket Size: **1 Day** Modification Factor: CV: **0** % AST: **0** % Start Date: **03/09/2009** End Date: **04/05/2009** [Retrieve](#) [Download](#) [Advanced](#) [Update](#)

Start Date	Actual Call Volume	Forecast Call Volume	Actual AST (sec)	Forecast AST (sec)
03/09/2009	0	11,116	0.00	395.30
03/10/2009	0	8,995	0.00	378.05
03/11/2009	0	8,845	0.00	438.12
03/12/2009	0	8,659	0.00	390.65
03/13/2009	0	9,850	0.00	378.42
03/14/2009	0	5,377	0.00	396.38
03/15/2009	0	4,093	0.00	377.06
03/16/2009	0	10,517	0.00	380.22
03/17/2009	0	8,821	0.00	373.83
03/18/2009	0	8,058	0.00	428.90
03/19/2009	0	8,557	0.00	380.89

**Figure 6.4 – View Forecast Results by Contact Group**

**6.1.3.3.2. Download Forecast Results**

The results can be downloaded into an Excel spreadsheet by clicking the download link for any stream. Upon downloading and opening the file, this spreadsheet (csv) should appear similar to as shown in Figure 6.5. Both Volume results and Average Service Time results, with upper and lower limits, will appear, if available.

	A	B	C	D	E	F	G	H	I	J	K
1		Start Time		Volume				Average Service Time			
2	Stream	Start Time	End Time	Forecast Value	Actual Value	Lower Limit	Upper Limit	Forecast Value	Actual Value	Lower Limit	Upper Limit
3	Stream	9/1/2003 0:00	9/2/2003 0:00	52152.72656	52236.25	44618.469	59686.984	164.9268188	164.926819	164.92682	164.926819
4	Stream	9/2/2003 0:00	9/3/2003 0:00	57320	57320	57320	57320	173.6034088	173.603409	173.60341	173.603409
5	Stream	9/3/2003 0:00	9/4/2003 0:00	48681.08594	54339	42867.012	54495.16	170.4949493	170.494949	170.49495	170.494949
6	Stream	9/4/2003 0:00	9/5/2003 0:00	48167.45703	50610	41745.336	54589.578	172.5253754	172.525375	172.52538	172.525375
7	Stream	9/5/2003 0:00	9/6/2003 0:00	45159.34766	48288	38529.32	51789.375	170.1160889	170.116089	170.11609	170.116089
8	Stream	9/6/2003 0:00	9/7/2003 0:00	20391.83398	20485	15587.03	25196.639	150.815094	150.815094	150.81509	150.815094
9	Stream	9/7/2003 0:00	9/8/2003 0:00	0	0	0	0	0	0	0	0
10	Stream	9/8/2003 0:00	9/9/2003 0:00	48894.28516	52371	41360.027	56428.543	165.4121704	167.949814	149.20496	181.619385
11	Stream	9/9/2003 0:00	9/10/2003 0:00	56495.42969	57320	49623.566	63367.293	173.6111603	173.981949	160.8989	186.323425
12	Stream	9/10/2003 0:00	9/11/2003 0:00	46478.81641	44701	41297.406	51660.227	170.5724792	171.116562	154.28162	186.863342
13	Stream	9/11/2003 0:00	9/12/2003 0:00	45971.42578	44797	40059.023	51883.828	172.5253754	173.537933	158.59448	186.456268
14	Stream	9/12/2003 0:00	9/13/2003 0:00	42339.33594	42468	36229.164	48449.508	170.1160889	169.218964	156.36975	183.862427
15	Stream	9/13/2003 0:00	9/14/2003 0:00	19884.13867	19603	15079.335	24688.943	150.6661682	150.135147	135.03493	166.297409
16	Stream	9/14/2003 0:00	9/15/2003 0:00	0	0	0	0	0	0	0	0
17	Stream	9/15/2003 0:00	9/16/2003 0:00	54628.37109	54083	47094.113	62162.629	166.9767303	168.30162	150.76952	183.183945
18	Stream	9/16/2003 0:00	9/17/2003 0:00	48137.15625	45849	41265.293	59009.02	173.8814697	173.028198	161.1692	186.593735
19	Stream	9/17/2003 0:00	9/18/2003 0:00	47862.29688	45442	42526.777	53197.816	170.932251	171.197815	154.64139	187.223114
20	Stream	9/18/2003 0:00	9/19/2003 0:00	46444.49219	42376	40550.477	52338.508	173.5379333	172.670197	159.60704	187.468626
21	Stream	9/19/2003 0:00	9/20/2003 0:00	43706.56078	44764	37330.578	50882.523	169.2189636	168.278015	155.47263	182.965302
22	Stream	9/20/2003 0:00	9/21/2003 0:00	19222.03711	18254	14417.233	24026.842	150.376236	150.250824	134.745	166.007477
23	Stream	9/21/2003 0:00	9/22/2003 0:00	0	0	0	0	0	0	0	0
24	Stream	9/22/2003 0:00	9/23/2003 0:00	51627.30859	50142	44093.051	59161.566	167.7935791	169.180862	151.58636	184.000793
25	Stream	9/23/2003 0:00	9/24/2003 0:00	45190.01563	43696	38318.152	52061.879	173.2594299	172.906403	160.54716	185.971695

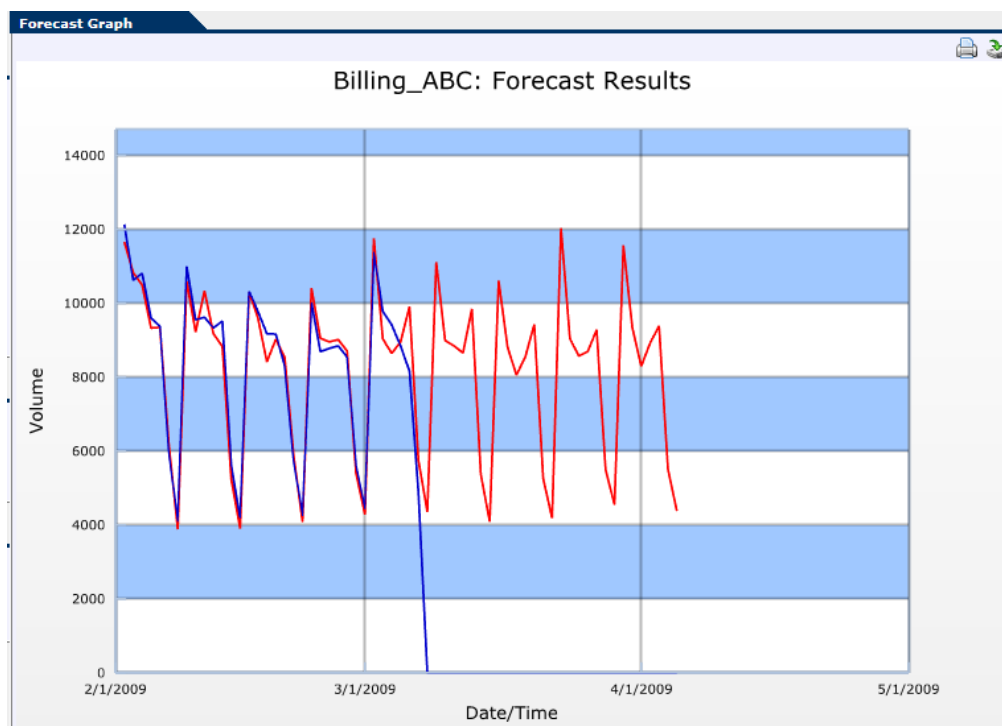
Figure 6.5 – Download Forecast Results by Stream

### 6.1.3.3.3. Graph Forecast Results

Forecasts, together with the actual values, can be graphed by clicking on the *Graph* link for a particular stream. The graph will appear similar to as shown in Figure 6.6. The graph shows the actual vs. the forecast results for the stream. The line in red shows the actual values, the line in blue shows the forecasted values.

The charts can be downloaded by clicking on the *Download* icon at the top of the chart as an Excel, Word, PowerPoint, or PDF document by clicking the respective icon.

Printing Charts and Reports is done by clicking the *Print* icon at the top of the chart or report. The browser will prompt you to print the chart or report when the print icon is clicked.



**Figure 6.6 – Forecast Graph**

A number of controls, including the start and end dates, are provided to enable refining the chart. The graph can be viewed with the following data types: Contact Volume Forecast, Contact Volume Upper Confidence Limit Forecast, Contact Volume Lower Confidence Limit Forecast, Handling Time Forecast, Handling Time Upper Confidence Limit Forecast, and Handling Time Lower Confidence Limit Forecast.

#### **6.1.3.3.4. View Detailed Statistics**

The user can view the detailed statistics generated by clicking on the *View* link for any stream. The page that appears is similar to as shown in Figure 6.7. Statistics provided in this page are explained in the sections below.



## View Detailed Statistics

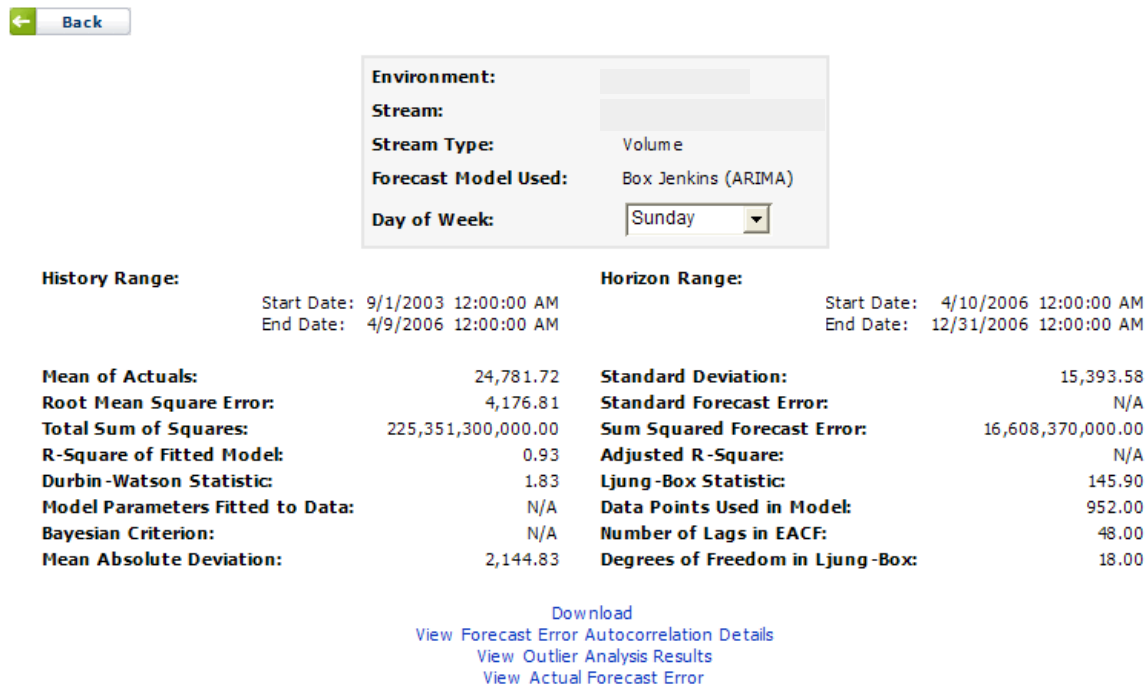


Figure 6.7 – View Detailed Statistics Page

### 6.1.3.3.4.1. Model Statistics

Model statistics are reported for all streams each time a forecast run is completed.

- **Mean of Actuals**

This statistic is the mean of actual contact volumes, or handling times, over the history period specified.

- **Root Mean Square Error**

The root mean square error (RMSE) is the square root of the mean squared forecast error over the history period specified.

- **Total Sum of Squares**

The total sum of squares is the sum of the squared forecast errors over the history period specified.

- **R-Square of Fitted Model**

R-Square is the fraction of variance in the actual data explained by the model over the history period.

- **Durbin-Watson Statistic**

The Durbin-Watson statistic is used to test the significance of first-lag autocorrelation of forecast errors (that is, forecast errors in successive periods, such as periods  $t$  and  $t+1$ ) over the history period specified.

- **Model Parameters Fitted to Data**

This statistic provides the number of model parameters used to fit the model to data. This value will not be available for Day of Week runs.

- **Bayesian Criterion**

The Bayesian Criterion is the mean square of the fitted forecast error over the history period, adjusted for model complexity (i.e. model parameters). Let  $N$  be the sample size,  $S$  be the mean squared error, and  $m$  be the number of parameters required by the model fitted. Then the Bayesian Criterion ( $BC$ ) is calculated as follows.

$$BC = S N^{(m/2N)}$$

It can be loosely interpreted as an estimate of out-of-sample forecast error. This value will not be available for Day of Week runs.

- **Mean Absolute Deviation**

The mean absolute deviation (MAD) is calculated as the mean of the absolute deviations for all forecast errors over the history period specified. Like the RMSE, it is used to measure the goodness-of-fit with respect to the actuals over the history period.

- **Standard Deviation**

This statistic is the standard deviation of actual values over the history period specified.

- **Standard Forecast Error**

The standard forecast error is the square root of the average forecast error adjusted for the number of parameters of the model over the history period specified. This value will not be available for Day of Week runs.

- **Sum of Squared Forecast Error**

The Sum of Squared Forecast Error is the sum of squared deviations of forecasts from actuals over the history period specified.

- **Adjusted R-Square**

Adjusted R-Square is the fraction of variance in the actual data explained by the model, adjusted for the number of parameters of the model.

- **Ljung-Box Statistic**

The Ljung-Box statistic is used to test the significance of the overall autocorrelation of the forecast errors over the historical period specified.

- **Data Points Used in Model**

This statistic provides the number of actual values used in fitting the model over the history period specified.

- **Number of Lags Used in EACF**

This statistic provides the number of lags used to calculate the autocorrelation of forecast errors. In a Day of Week run, this value will change based on the day selected.

- **Degrees of Freedom in Ljung-Box**

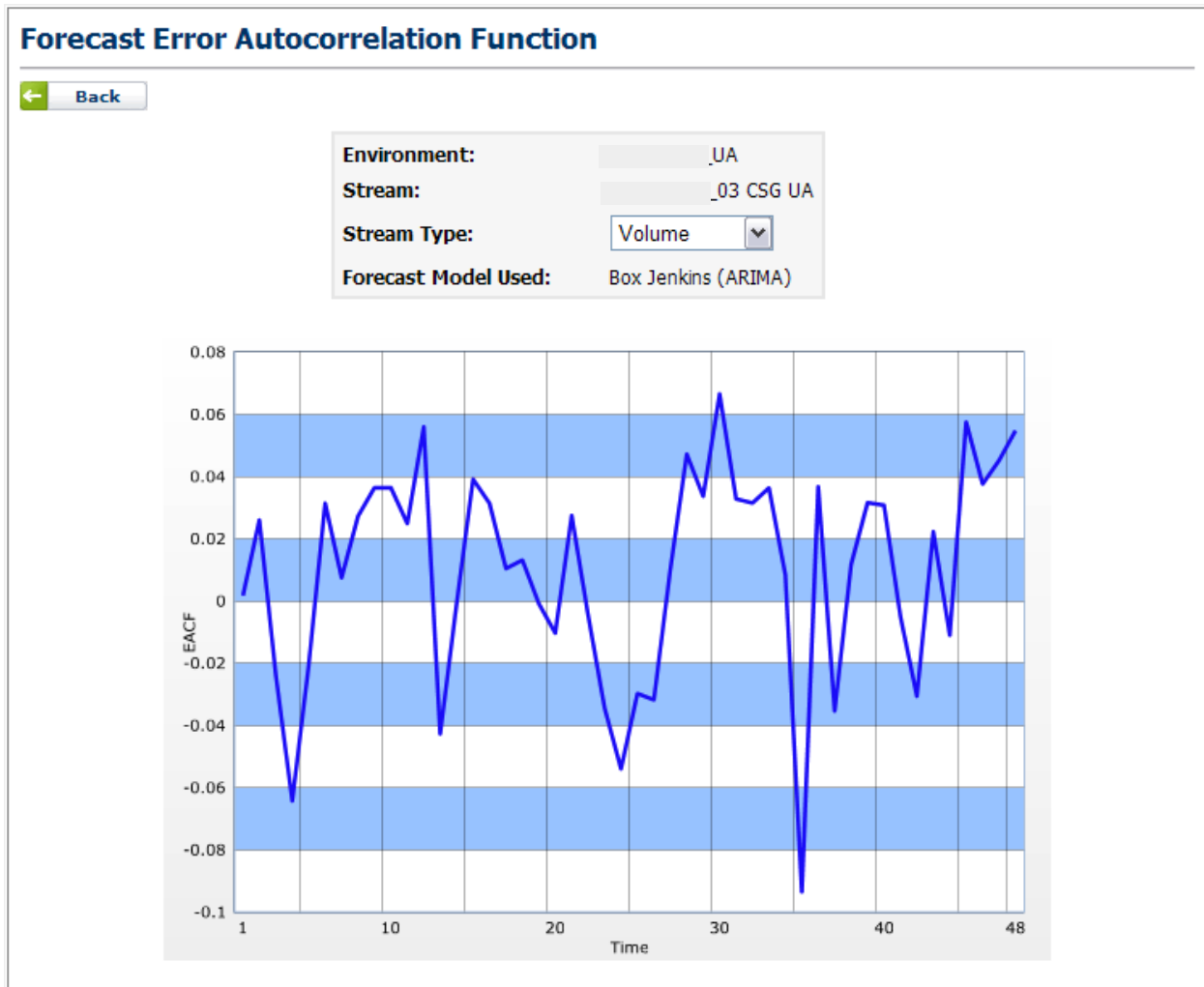
This statistic is obtained as the difference between the number of autocorrelation coefficients included in the Ljung-Box statistic and the number of parameters used in the model.

#### **6.1.3.3.4.2. Forecast Error Autocorrelation Function**

The forecast error autocorrelation function (FEAF) displays autocorrelations of forecast errors with each error's immediate past. For instance, the first data point displayed shows

the correlation value between the most recent forecast error with its immediate past. The second data point represents the correlation of the most recent forecast error with the forecast error from two periods earlier, and so on. If the stream data is highly correlated with its past, the Box-Jenkins model uses this information to construct forecasts.

The user can view the FEAF graph by clicking on the *View Forecast Error Autocorrelation Details* link from the *View Detailed Statistics* for any stream. The FEAF graph should appear similar to as shown in Figure 6.8.



**Figure 6.8 – View Forecast Error Autocorrelation Details**

#### **6.1.3.3.4.3. View Outlier Analysis Results**

Results of the outlier analysis can be accessed by clicking the *View Outlier Analysis Results* link from the *View Detailed Statistics* page. The *Outlier Analysis Summary* page should appear similar to as shown in Figure 6.9. The *Outlier Analysis Summary* page shows the actual values in the database versus the calculated values, and a message for the result of the outlier analysis. If an actual value is beyond the outlier threshold specified in the forecast profile used, an attempt is made to replace the actual value by an expected value before generating forecasts.

Caution: This page will only show the days with outlier data values.

## Outlier Analysis Summary

 Back

<b>Environment:</b>	
<b>Stream:</b>	64 CSG
<b>Stream Type:</b>	Volume
<b>Forecast Model Used:</b>	Box Jenkins (ARIMA)
<b>Outlier Threshold:</b>	1.96

Start Date	End Date	Original Value	Replaced Value	Replace Code
6/2/2004	6/3/2004	2,988.00	1,605.74	Data Updated (Code: 1)
6/5/2004	6/6/2004	2,724.50	1,735.47	Data Updated (Code: 1)
6/6/2004	6/7/2004	2,724.50	1,734.83	Data Updated (Code: 1)
8/30/2004	8/31/2004	4,953.00	3,230.30	Data Updated (Code: 1)
9/28/2004	9/29/2004	4,450.00	3,056.71	Data Updated (Code: 1)
10/2/2004	10/3/2004	3,777.40	2,833.71	Data Updated (Code: 1)
10/4/2004	10/5/2004	5,805.00	3,912.82	Data Updated (Code: 1)
10/23/2004	10/24/2004	4,234.80	3,277.46	Data Updated (Code: 1)
10/29/2004	10/30/2004	3,974.00	2,902.76	Data Updated (Code: 1)
10/30/2004	10/31/2004	4,605.40	3,468.93	Data Updated (Code: 1)

**Figure 6.9 – View Outlier Analysis Summary**

The Replace Code column provides information on whether or not the actual data point was updated with the “smoothed” value, and a message code. Explanations for possible message codes are provided in Figure 6.10.

Message Code	Status
0	Outlier detecting is successful. Data is not updated.
1	Outlier detecting is successful. Data is updated.
2	Not enough data points in the stream to detect outliers.
3	Not enough valid data points in the stream to detect outliers.
4	No historical data with the same event is available. Normal forecast is used.
5	No historical data with the same event is available. Normal forecast is not available. Data is not updated.

**Figure 6.10. – Outlier Analysis Message Codes**

#### 6.1.3.3.4.4. View Actual Forecast Error

If a run's forecast horizon covers a period for which there is historical stream data, this type of run is considered to be Back Testing. In this case the user can access Forecast Error over the horizon of the run. These can be viewed and downloaded through the *View Actual Forecast Error* link. The user is also provided with a graph of forecast error over the horizon, as shown in Figure 6.11. The MAPE (Mean Absolute Percentage Error) and WAPE (Weighted Absolute Percentage Error) values for the period analyzed are reported in this page. The user can also display Actual Stream Data and Forecast Data along with the error to diagnose accuracy issues in the forecasts.

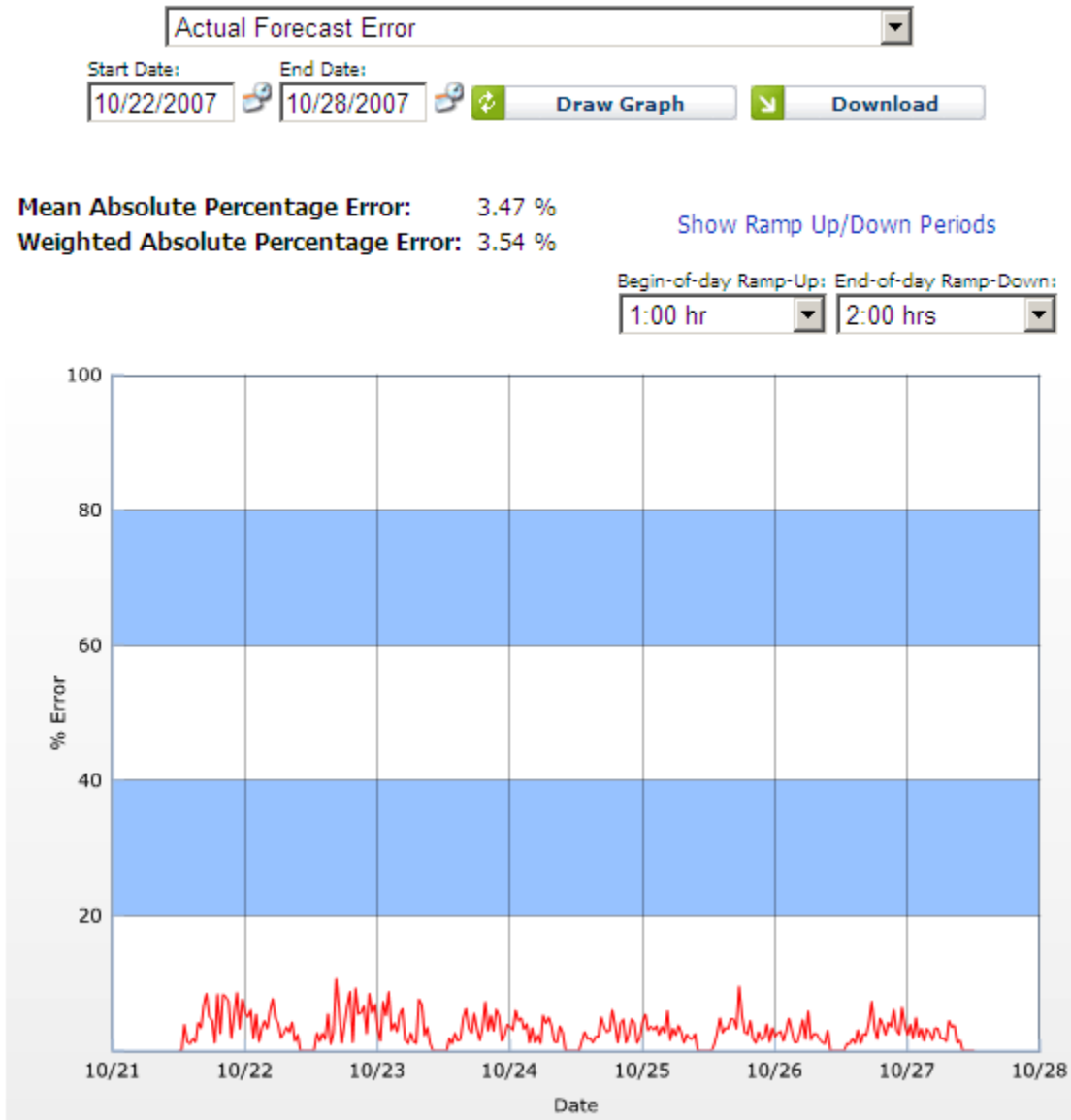
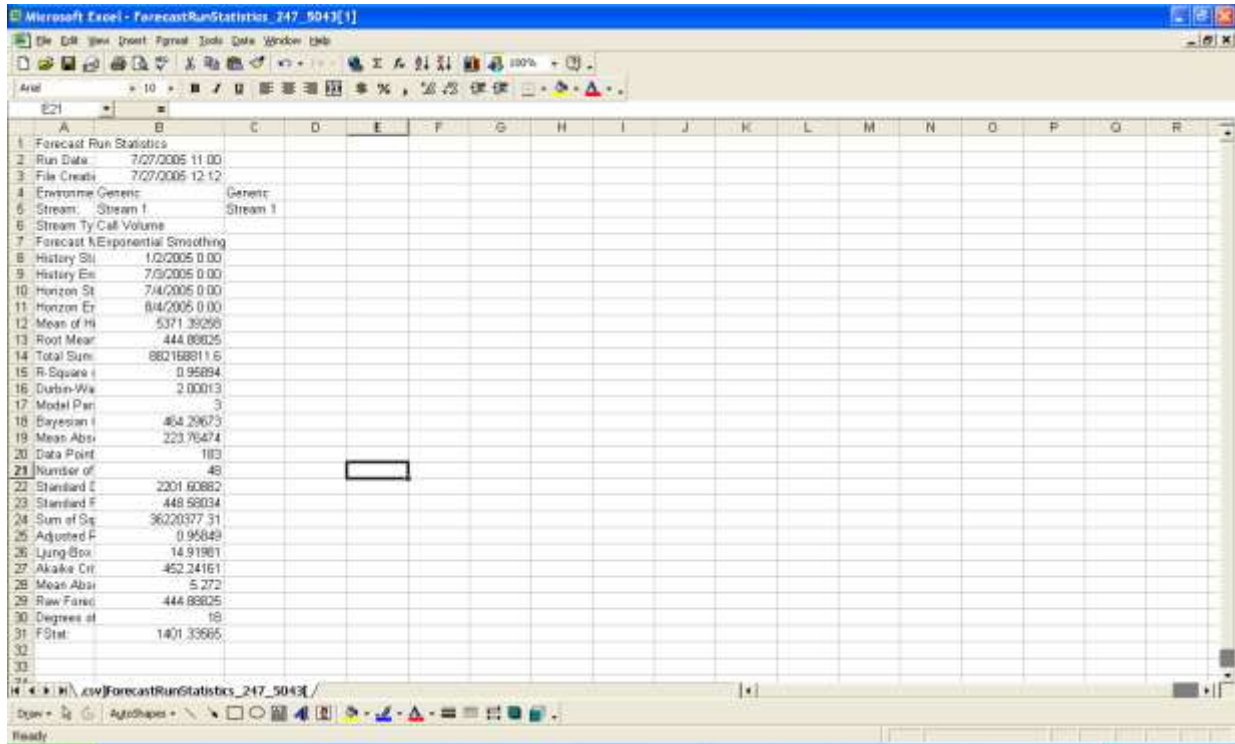


Figure 6.11 – View Actual Forecast Error

### 6.1.3.3.5. Download Detailed Statistics

The user can download the detailed statistics by clicking on the *Download* link for the detailed statistics for contact volume or average handling times. The results are downloaded in comma-separated values (csv) format, which can be saved as a text file or loaded directly into Microsoft Excel. When opened using Microsoft Excel, the results should look similar to those in Figure 6.12.



The screenshot shows a Microsoft Excel spreadsheet titled "ForecastRunStatistics\_247\_5043[1]". The data is organized into columns A through R and rows 1 through 31. The data includes various statistical metrics for a forecast run.

Row	Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	Column J	Column K	Column L	Column M	Column N	Column O	Column P	Column Q	Column R	
1	Forecast Run Statistics																		
2	Run Date	7/27/2005 11:00																	
3	File Create	7/27/2005 12:12																	
4	Environment Generic		Generic																
5	Stream	Stream 1	Stream 1																
6	Stream Ty Call Volume																		
7	Forecast NEponential Smoothing																		
8	History Stl	1/2/2005 0:00																	
9	History En	7/3/2005 0:00																	
10	Horizon St	7/4/2005 0:00																	
11	Horizon En	8/4/2005 0:00																	
12	Mean of H	5371.39298																	
13	Root Mean	444.88825																	
14	Total Sum	88218811.5																	
15	R-Square	0.95894																	
16	Dubin-Wa	2.00013																	
17	Model Par	3																	
18	Bayesian I	464.29673																	
19	Mean Abs	223.76474																	
20	Data Point	183																	
21	Number of	48																	
22	Standard E	2201.63882																	
23	Standard F	448.68034																	
24	Sum of Sq	36220377.31																	
25	Adjusted F	0.95849																	
26	Ljung Box	14.91981																	
27	Akaike Cri	452.24161																	
28	Mean Abs	5.272																	
29	Raw Fore	444.88825																	
30	Degree of	19																	
31	FStat	1471.35665																	

Figure 6.12 – Download Detailed Statistics

## 6.2. Forecast Summary

In the *Forecasts by Streams* page, the Forecast Summary area shows the summary information for the forecast run, including the Environment name, average number of forecasted contacts per week, total number of contacts forecasted, average forecasted handling time per contact, mean absolute percentage error (MAPE), forecast history period with the start and end dates, forecast horizon period with the horizon start and horizon end dates, forecasting model used, bucket size, name of the forecast profile and the name of the special events table used. This area should look similar to that in Figure 6.13.



**Figure 6.13 – Forecast Summary**

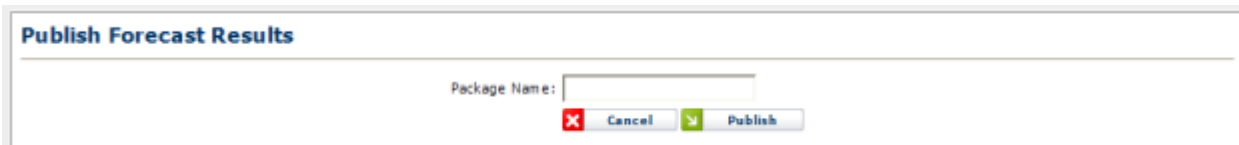
### 6.3. Delete a Completed Forecast Run

The user can delete a *Completed* Forecast run, or a Forecast run that is in the *Error* state or the *Aborted* state, by checking the checkbox in the first column of the Forecast row, and then selecting the *Delete* button at the top of the column. All data generated by the Advanced Workforce Optimization Portal for this Forecast run is deleted. However, associated Profiles and special events tables are not deleted.

### 6.4. Publish a Forecast Run

The user can publish a Forecast Run by selecting the *Publish* button in the *Forecast Results by Stream* module, which displays the *Publish Forecast Results* module, as shown in Figure 6.14. A Forecaster may publish any forecast results he or she has generated, and a Manager may publish any forecast results that are in an environment assigned to him or her. Once a forecast run is published, the results of that run can be transferred to other databases, as described in the Administration manual.

To publish a forecast run, the user must either select an existing package to replace, or enter a new package name. Then, an effective start date (which defaults to the current date) and an optional expiration date may be selected. Selecting the *Publish* button will publish the forecast run, and selecting the *Cancel* button will return to the Forecast Results.



**Figure 6.14 – Publish Forecast Results**

## 6.5. What-If Comparison

This feature is accessible by selecting at least one run by checking the box to the left of the environment and clicking on the Compare button from the Manage Forecast Runs page, as shown in Figure 6.15. Up to five runs may be compared.

Environment	Description	User	Configuration	Last Run	Completed	Status	Action
<input type="checkbox"/>	What-If Multiple CGs	12/15/14-12/21/14	Larsen, Cathy	Profile: Advanced Configuration	12/15/2014 03:23 PM	12/15/2014 03:23 PM	Published
<input checked="" type="checkbox"/>	What-If Multiple CGs	CCL 8/25 to 8/31 +10% CV	Admin, Admin	Profile: Advanced Configuration	8/19/2014 03:05 PM	8/19/2014 03:05 PM	Official
<input checked="" type="checkbox"/>	What-If Multiple CGs	CCL 8/25 to 8/31	Admin, Admin	Profile: Advanced Configuration	8/19/2014 02:58 PM	8/19/2014 02:58 PM	Official

**Figure 6.15 – Manage Forecast Runs**

To use the functionality, after the page loads with the run information for the run(s) selected, the user can add additional runs to compare in the Select Run area by highlighting the run and then clicking on the green “+” icon on the right. This will add the run to the list of runs to compare. After selecting each run, the page will reload with data from the run added. If desired, select other measure in the Select Measures area and click the Redraw button. Runs may be removed by clicking on the red “x” icon to the right of the run in the Description section.

Forecast, Accuracy (%) and Actuals may be compared for the Forecast runs.



**Figure 6.16 – What-If Refine View/Forecast Graph**



## 7. Forecast Accuracy Report

The user can generate Forecast Accuracy Reports over a period of time for different forecast types (e.g. IDP, budget forecasts) or scenarios. The *Forecast Accuracy Report* is accessible from the *Planning-Forecaster* menu as shown in Figure 7.1.

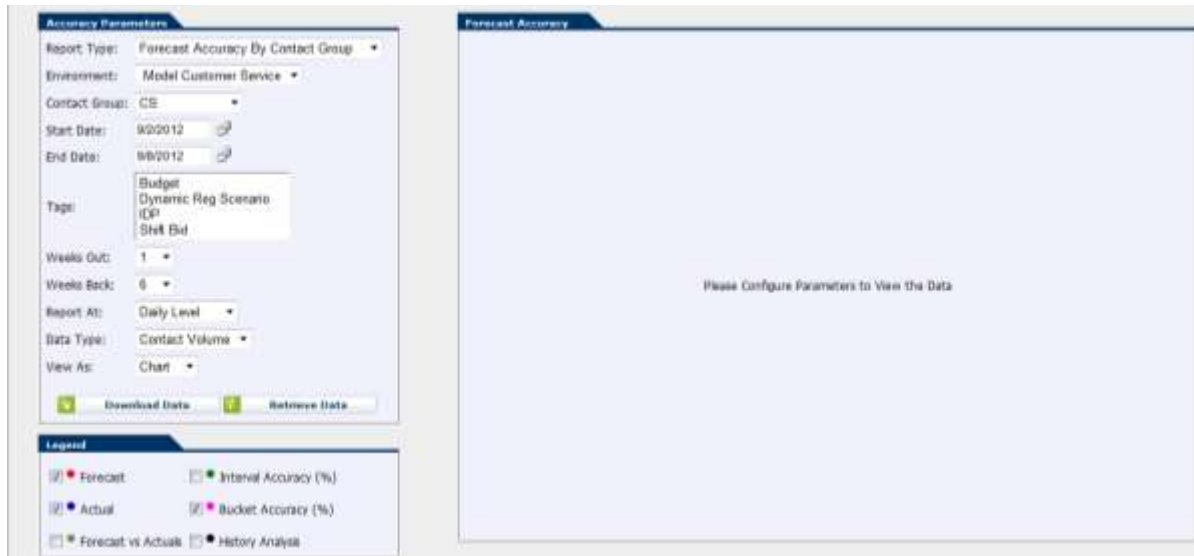


Figure 7.1 – Forecast Accuracy Report

### 7.1. Accuracy Parameters

In the Accuracy Parameters section, the user can select the Report Type, Environment, Contact Group, Start and End Dates, Tag, the period of time in weeks out and back, the report level, the data type and view. The Report Type offers either By Contact Group or By Entire Company. When By Entire Company is selected, parameters that are not applicable are disabled.

When By Contact Group is selected, the user has the option in the Legend section to add additional data items to the chart. Once the selections are made, the user can click on the Retrieve Data button shown in Figure 7.2.

Different forecast scenario runs must be tagged to generate the Accuracy Report. Tags are created under *Administration – Operations – Manage Tags*.

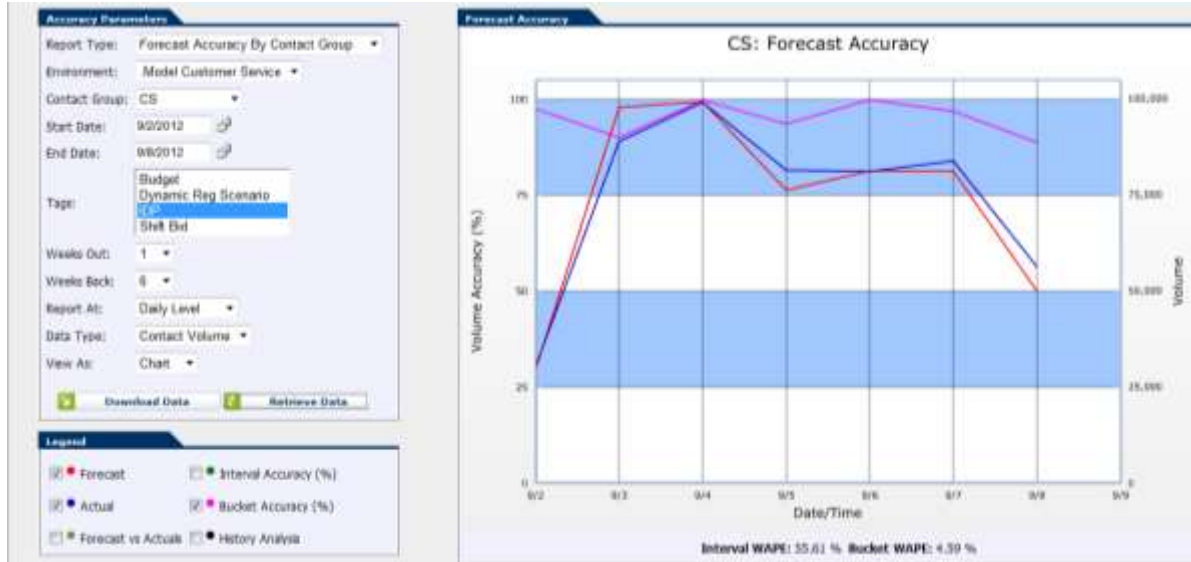


Figure 7.2 – Forecast Accuracy By Contact Group

## 7.2. Download Data

Data from the Accuracy Report page can be downloaded by clicking on the Download Data button. The results of the download for By Contact Group are shown in Figure 7.3.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
		Volume	Volume	Volume	Volume	Service	Service	Service	Service								
		Actual	Forecast	Interval	Bucket	Time	Time	Time	Time	NCO	NCO	AHT					
1	Date			Accuracy	Accuracy	Actual	Forecast	Accuracy	Accuracy	Average	Min	Max	Average	Min	Max		
2	9/2/2012 0:00	30347	29609.63	0.32389	0.9757	286.5615	286.0625	0.69604	0.95833	30347	30347	30347	286.5615	286.5615	286.5615		
3	9/3/2012 0:00	89070	97912.77	0.52427	0.90072	286.8725	289.3063	0.89545	0.99152	89070	89070	89070	286.6465	286.6465	286.6465		
4	9/4/2012 0:00	99242	99423.71	0.46604	0.99817	325.7025	333.1822	0.85667	0.97704	99242	99242	99242	321.5301	321.5301	321.5301		
5	9/5/2012 0:00	81565	76371.8	0.44737	0.93633	329.5467	325.8653	0.80296	0.98883	81565	81565	81565	331.1912	331.1912	331.1912		
6	9/6/2012 0:00	81224	81321.47	0.45601	0.9598	322.15	321.295	0.80088	0.99643	81224	81224	81224	322.3823	322.3823	322.3823		
7	9/7/2012 0:00	83957	81368.54	0.44572	0.96917	318.5127	314.4859	0.84484	0.98736	83957	83957	83957	319.1108	319.1108	319.1108		
8	9/8/2012 0:00	56394	50072.59	0.31731	0.88791	312.0678	311.2369	0.64492	0.95734	56394	56394	56394	312.0693	312.0693	312.0693		
9																	
10																	
11																	

Figure 7.3 – Download Data Results

The results of the downloaded data for By Entire Company are shown in Figure 7.4.

For each contact group, Forecast Accuracy is provided in terms of % Value Variation at daily and interval levels for both contact volume and AHT. %Value Variation and % Absolute Value Variation are computed as shown below.

$$\% \text{ Value Variation} = 100 + 100 * (\text{Actual} - \text{Forecast}) / \text{Actual}$$

$$\% \text{ Absolute VV} = 100 - 100 * \text{ABS}((\text{Actual} - \text{Forecast}) / \text{Actual})$$

	A	B	C	D	E	F	G	H	I	J
1	<b>Forecast Accuracy Report</b>					Definitions	$\% \text{ Value Variation} = 100 \cdot 100 \cdot (\text{Actual} - \text{Forecast}) / \text{Actual}$ $\% \text{ Absolute VV} = 100 \cdot 100 \cdot \text{ABS}((\text{Actual} - \text{Forecast}) / \text{Actual})$			
3	Call Type:	CS								
4	Center:	.Model								
6	<b>Daily</b>		<b>1 Week Prior</b>		<b>2 Weeks Prior</b>		<b>3 Weeks Prior</b>		<b>3 Months Prior</b>	
7	<b>Day of Week</b>	<b>Date</b>	<b>Value Variation</b>	<b>Value Variation</b>	<b>AHT % Value Variation</b>	<b>Value Variation</b>	<b>AHT % Value Variation</b>	<b>Volume % Value Variation</b>	<b>Value Variation</b>	<b>Value Variation</b>
8	Sunday	02/15/2009	95.28%	89.92%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
9	Monday	02/16/2009	97.32%	74.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10	Tuesday	02/17/2009	94.09%	83.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
11	Wednesday	02/18/2009	95.07%	89.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
12	Thursday	02/19/2009	100.53%	90.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
13	Friday	02/20/2009	92.41%	87.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14	Saturday	02/21/2009	99.61%	83.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
16	<b>Total Weekly VV:</b>		<b>96.33%</b>	<b>85.16%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>
18	<b>Daily</b>		<b>1 Week Prior</b>		<b>2 Weeks Prior</b>		<b>3 Weeks Prior</b>		<b>3 Months Prior</b>	
19	<b>Day of Week</b>	<b>Date</b>	<b>Absolute VV</b>	<b>Volume % Absolute VV</b>	<b>AHT % Absolute VV</b>	<b>Absolute VV</b>	<b>AHT % Absolute VV</b>	<b>Volume % Absolute VV</b>	<b>Absolute VV</b>	<b>Volume % Absolute VV</b>
20	Sunday	02/15/2009	95.28%	89.92%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
21	Monday	02/16/2009	97.32%	74.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22	Tuesday	02/17/2009	94.09%	83.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
23	Wednesday	02/18/2009	95.07%	89.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
24	Thursday	02/19/2009	99.47%	90.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
25	Friday	02/20/2009	92.41%	87.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
26	Saturday	02/21/2009	99.61%	83.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
28	<b>Total Weekly AVV:</b>		<b>96.33%</b>	<b>85.16%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>
30	<b>Interval</b>		<b>1 Week Prior</b>		<b>2 Weeks Prior</b>		<b>3 Weeks Prior</b>		<b>3 Months Prior</b>	
31	<b>Day of Week</b>	<b>Date</b>	<b>AHT % Absolute</b>	<b>Volume % Absolute VV</b>	<b>AHT % Absolute VV</b>	<b>Volume % Absolute</b>	<b>AHT % Absolute VV</b>	<b>Volume % Absolute VV</b>	<b>AHT % Absolute</b>	<b>Volume % Absolute VV</b>
32	Sunday	02/15/2009	89.96%	89.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
33	Monday	02/16/2009	93.02%	74.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
34	Tuesday	02/17/2009	91.73%	81.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
35	Wednesday	02/18/2009	94.59%	87.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
36	Thursday	02/19/2009	97.06%	90.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
37	Friday	02/20/2009	92.43%	87.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
38	Saturday	02/21/2009	96.98%	81.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
40	<b>Weekly Average Interval AVV:</b>		<b>93.84%</b>	<b>84.41%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>

Figure 7.4 – Downloaded Data results By Entire Company

## 8. Special Event Profiles

If the actual value observed in a period is unusually higher or lower than the expected value, that period could be configured as a special event if it is a recurring one. For example, Monday, July 4<sup>th</sup>, 2008, should be configured as a special event for a contact center environment that had an unusually higher or lower call volume on every past July 4<sup>th</sup> than expected. The actual call volume on that day would be substantially higher or lower than the call volume on any other non-event Monday. The Forecaster will make appropriate adjustments while using the data for this date in generating forecasts for Monday, July 4<sup>th</sup>, 2008.

### 8.1. Manage Special Event Profiles

A new special event profile can be added by going to the *Planner-Forecaster-Profiles-Special Events* page. This page should look similar to one shown in Figure 8.1. The user can edit or delete any of the existing profiles for special events from this page.

The screenshot shows the 'Manage Special Events' page. At the top, there is a table with the following data:

Profile	Description	User	Created		Modified		Action
Boxing Only	Boxing SE Profile	admin, admin	6/29/2005	8:13 AM	1/20/2006	2:49 PM	[Edit] [Delete]
WWE Only	WWE Events Only	admin, admin	6/29/2005	8:17 AM	6/29/2005	2:43 PM	[Edit] [Delete]
test	test	User, Test	6/29/2005	12:03 PM	6/29/2005	12:03 PM	[Edit] [Delete]
USPS Events	USPS Special Events Profile	User, Test	9/7/2005	12:54 PM	9/7/2005	1:32 PM	[Edit] [Delete]
test	test	demo, demo	5/9/2006	1:39 PM	5/9/2006	1:39 PM	[Edit] [Delete]
Events-Sprint	Events-Sprint	User, Test	9/11/2006	5:58 PM	9/11/2006	5:58 PM	[Edit] [Delete]

Below the table is a 'Back' button. At the bottom of the page is a form titled 'Add New Special Event Profile' with the following fields:

Name:  Description:

Figure 8.1 – Manage Special Events Page

### 8.2. Add Special Event Profile

A new special events profile can be added using the *Add New Special Event Profile* area in the *Manage Special Events* Page as shown in Figure 8.2. To add a new special event profile, a name and a description must be provided.

The close-up shows the 'Add New Special Event Profile' form with the following fields:

Name:  Description:

Figure 8.2 – Add a Special Event

Clicking on the *Add Profile* button causes the new profile to be created, unless a profile with the same name already exists. The new profile will immediately appear in the list of profiles.

### 8.3. Edit Special Event Profile

A Special Events Profile can be edited by clicking the *Edit* icon button from the Manage Special Events page. The *Edit Special Events Profile* page will appear, as shown in Figure 8.3.

A special event can be enabled or disabled by checking or un-checking the *Enable* box for that event. The Forecaster includes the special events that are enabled in generating forecasts. All disabled special events are ignored.

#### Edit Special Events Profile

Save Profile
 Cancel

User:	admin, admin	Date Created:	6/29/2005 08:13 AM
Profile:	<input type="text" value="Boxing Only"/>	Date Modified:	1/20/2006 02:49 PM
Description:	<input type="text" value="Boxing SE Profile"/>		

Search

Event Name	Event Level	Event Type	Enabled
.Friday after Memorial Day	Day	Calendar	<input type="checkbox"/>
.Friday before Memorial Day	Day	Calendar	<input type="checkbox"/>
.Monday before Memorial Day	Day	Calendar	<input type="checkbox"/>
.Saturday after Memorial Day	Day	Calendar	<input type="checkbox"/>
.Saturday before Memorial Day	Day	Calendar	<input type="checkbox"/>
z_Boxing	Day	Planned	<input checked="" type="checkbox"/>
z_TNA	Day	Planned	<input type="checkbox"/>
z_WWE	Day	Planned	<input type="checkbox"/>

**Figure 8.3 – Edit Special Events Profile**

### 8.4. Delete Special Event Profile

A Special Event Profile can be deleted by clicking on the *Delete* icon button for that particular special event profile as shown in Figure 8.1. A message will appear, as in Figure 8.4, requesting the user to confirm the deletion. A Special Event Profile used in a forecast run that is either being processed at the moment or in the queued state cannot be deleted.

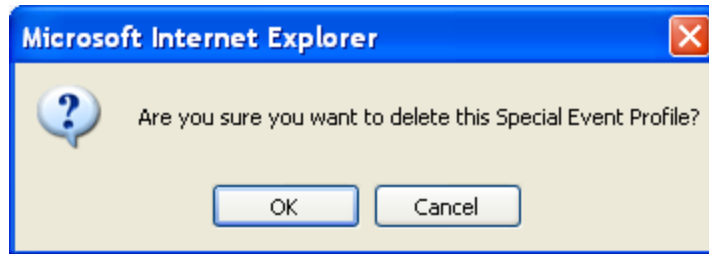


Figure 8.4 –Delete Special Events Profile Conformation

## 9. Data Management

The Forecaster database is updated either with an automated process or using the upload data functionality provided under the *Database-Manage* tab. If an automated data upload process is used in the user’s set up, it is discussed in the Data Interface manual. This section discusses manual upload and data editing functionalities only. Stream data including contact volumes and handling times data may be uploaded from csv files. Special events data is updated through the web site.

### 9.1. Streams

Stream data may be viewed, edited, or graphed using the *Stream Data* module, and may be uploaded using the *Upload Stream Data* module. Both of these modules are described in the following sections.

#### 9.1.1. Stream Data

Regardless of how data is being updated, stream data may be viewed, edited, or graphed by using the *Stream Data* module. It is reached by clicking the *Stream Data* link under the *Database-Manage* tab. The *Stream Data* page should appear similar to as shown in Figure 9.1.

#### Manage Stream Data

Select Environment:						
Raw Data						
Environment	Stream	History Start Date & Time		History End Date & Time		Action
Raw Data	AA0101	1/1/1999	01:00:00 AM	1/1/2000	12:00:00 AM	
Raw Data	AA0102	1/1/1999	12:00:00 AM	1/1/2000	12:00:00 AM	
Raw Data	AA0104	1/1/1999	12:00:00 AM	1/1/2000	12:00:00 AM	
Raw Data	AA0105	1/1/1999	12:00:00 AM	1/1/2000	12:00:00 AM	
Raw Data	AA0106	1/1/1999	01:00:00 AM	1/1/2000	12:00:00 AM	
Raw Data	AA0107	1/1/1999	12:00:00 AM	1/1/2000	12:00:00 AM	
Raw Data	AA0108	1/1/1999	12:00:00 AM	1/1/2000	12:00:00 AM	
Raw Data	AA0109	1/1/1999	12:00:00 AM	1/1/2000	12:00:00 AM	
Raw Data	AA0110	1/1/1999	12:00:00 AM	1/1/2000	12:00:00 AM	

Figure 9.1 – Stream Data Page

### 9.1.1.1. View Stream Data

When the *View* icon button in the same row with a stream is clicked, stream data is displayed with the Stream name, Start and End Times for the actual values, and whether the value was replaced by the user, as shown in Figure 9.2. For time periods that do not have any data in the database, zeros are displayed.

Selecting an option in the *Select Data Type* drop-down will cause either the Volume, or the Average Service Time, or both values, to be displayed.

#### View Stream Data

Stream Name	Start Date & Time	End Date & Time	Value	Replace
Stream 01	4/15/2006 12:00:00 AM	4/16/2006 12:00:00 AM	6083	No
Stream 01	4/14/2006 12:00:00 AM	4/15/2006 12:00:00 AM	11274	No
Stream 01	4/13/2006 12:00:00 AM	4/14/2006 12:00:00 AM	15259	No
Stream 01	4/12/2006 12:00:00 AM	4/13/2006 12:00:00 AM	14406	No
Stream 01	4/11/2006 12:00:00 AM	4/12/2006 12:00:00 AM	14182	No
Stream 01	4/10/2006 12:00:00 AM	4/11/2006 12:00:00 AM	16697	No
Stream 01	4/9/2006 12:00:00 AM	4/10/2006 12:00:00 AM	1581	No
Stream 01	4/8/2006 12:00:00 AM	4/9/2006 12:00:00 AM	7727	No
Stream 01	4/7/2006 12:00:00 AM	4/8/2006 12:00:00 AM	11676	No
Stream 01	4/6/2006 12:00:00 AM	4/7/2006 12:00:00 AM	13276	No
Stream 01	4/5/2006 12:00:00 AM	4/6/2006 12:00:00 AM	15236	No
Stream 01	4/4/2006 12:00:00 AM	4/5/2006 12:00:00 AM	12818	No
Stream 01	4/3/2006 12:00:00 AM	4/4/2006 12:00:00 AM	19203	No
Stream 01	4/2/2006 12:00:00 AM	4/3/2006 12:00:00 AM	1882	No
Stream 01	4/1/2006 12:00:00 AM	4/2/2006 12:00:00 AM	9035	No
Stream 01	3/31/2006 12:00:00 AM	4/1/2006 12:00:00 AM	15223	No
Stream 01	3/30/2006 12:00:00 AM	3/31/2006 12:00:00 AM	15019	No
Stream 01	3/29/2006 12:00:00 AM	3/30/2006 12:00:00 AM	16962	No
Stream 01	3/28/2006 12:00:00 AM	3/29/2006 12:00:00 AM	12549	No
Stream 01	3/27/2006 12:00:00 AM	3/28/2006 12:00:00 AM	20458	No
Stream 01	3/26/2006 12:00:00 AM	3/27/2006 12:00:00 AM	0	No
Stream 01	3/25/2006 12:00:00 AM	3/26/2006 12:00:00 AM	5540	No
Stream 01	3/24/2006 12:00:00 AM	3/25/2006 12:00:00 AM	15751	No
Stream 01	3/23/2006 12:00:00 AM	3/24/2006 12:00:00 AM	15456	No
Stream 01	3/22/2006 12:00:00 AM	3/23/2006 12:00:00 AM	15932	No
Stream 01	3/21/2006 12:00:00 AM	3/22/2006 12:00:00 AM	15022	No
Stream 01	3/20/2006 12:00:00 AM	3/21/2006 12:00:00 AM	18884	No
Stream 01	3/19/2006 12:00:00 AM	3/20/2006 12:00:00 AM	0	No
Stream 01	3/18/2006 12:00:00 AM	3/19/2006 12:00:00 AM	9688	No
Stream 01	3/17/2006 12:00:00 AM	3/18/2006 12:00:00 AM	15653	No

Figure 9.2 – View Stream Data Page

### 9.1.1.2. Edit Stream Data

Stream data can be edited by clicking on the *Edit* button in the *View Stream Data* page, as shown in Figure 9.3. To edit a data value, type in the new value in the edit box and click on the *Update* button. Data can be edited on any aggregate level. If you wish to edit data on a daily basis, change the Bucket Size to 1 Day, and then edit a day's value. The ratio by which you change the daily total will be applied equally to the raw interval level data.

## Edit Stream Data

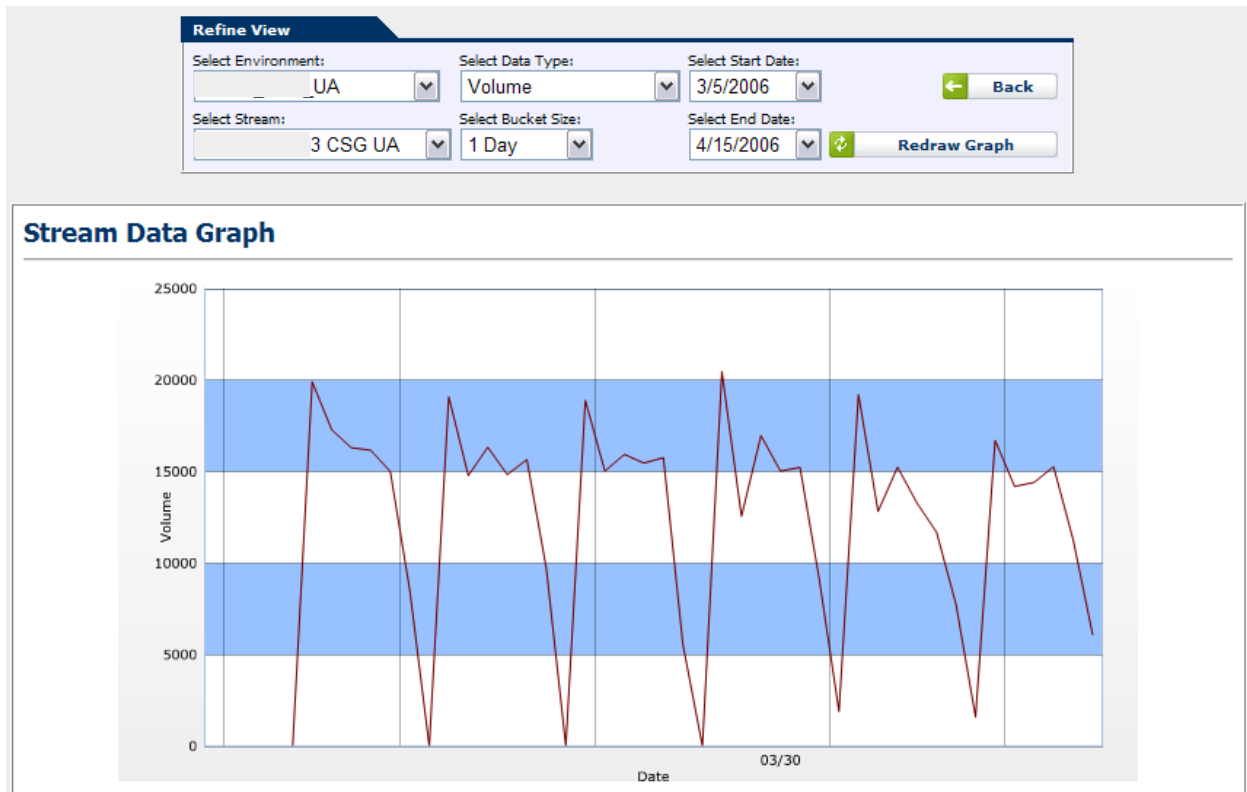
Stream Name	Start Date & Time	End Date & Time	Value	Mark	Replace
Stream 01	4/15/2006 11:30:00 PM	4/16/2006 12:00:00 AM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 13:00:00 PM	4/15/2006 11:30:00 PM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 10:30:00 PM	4/15/2006 11:00:00 PM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 10:00:00 PM	4/15/2006 10:30:00 PM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 09:30:00 PM	4/15/2006 10:00:00 PM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 09:00:00 PM	4/15/2006 09:30:00 PM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 08:30:00 PM	4/15/2006 09:00:00 PM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 08:00:00 PM	4/15/2006 08:30:00 PM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 07:30:00 PM	4/15/2006 08:00:00 PM	0	<input type="checkbox"/>	No
Stream 01	4/15/2006 07:00:00 PM	4/15/2006 07:30:00 PM	0	<input type="checkbox"/>	No

Figure 9.3 - Edit Stream Data

### 9.1.1.3. Graph Stream Data

Stream data can be graphed by clicking on the *Graph* icon button for a particular stream. The graph should appear similar to as shown in Figure 9.4. The graph shows all actual values in the database for the stream in red.





**Figure 9.4– Stream Data Graph**

Controls that allow selecting the environment, stream name, data type, and display bucket size are provided to refine the chart. Aggregated values can be displayed by selecting a larger bucket size than the bucket size the values are stored in the database.

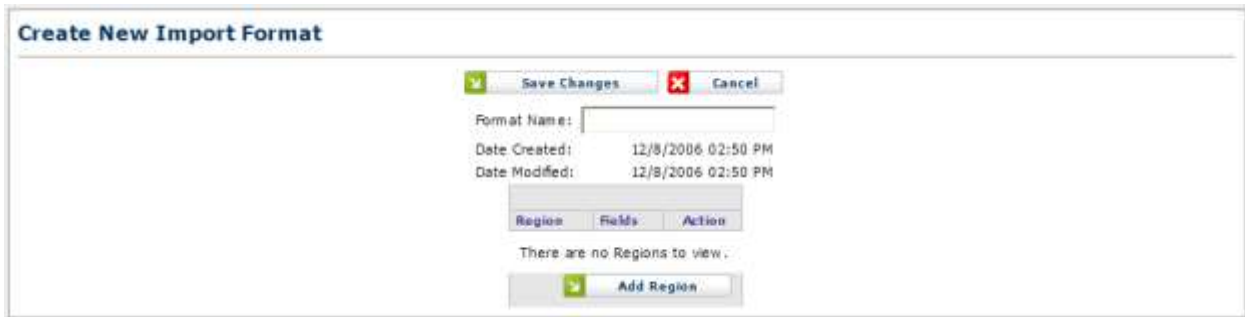
### 9.1.2. Upload Stream Data

The *Upload Stream Data* module can be reached by clicking on the *Upload Stream Data* link under the *Database Update* tab. This module uploads stream data into the database. In order to upload a data file, a format describing the content of the file must be selected. If no such format is available, a new format must be created.

*Caution: Only daily contact volume data may be uploaded. Uploading contact volume data in larger bucket sizes such as weekly or monthly may result in inaccurate results.*

#### 9.1.2.1. Create Stream Data Import Format

A new file format can be created by clicking on the *Create* link in the *Upload Stream Data* page. The *Create New Import Format* page should appear similar to as shown in Figure 9.5. A name is required to identify the new import format. New regions can be added by clicking on the *Add Region* button. The new import format is saved by clicking on the *Save Changes* button.



**Figure 9.5 – Create a New Import Format Page**

### 9.1.2.2. Edit Stream Data Import Format

An existing file format can be updated by clicking on the *Edit* link in the *Upload Stream Data* page. The *Edit Import Format* page should appear similar to as shown in Figure 9.6. Existing regions can be edited or deleted by clicking on the *Edit* or *Delete* icon buttons in the Action column. New regions can be added by clicking on the *Add Region* button. The file format is updated by clicking on the *Save Changes* button.



**Figure 9.6 – Edit Import Format Page**

### 9.1.2.3. Upload Stream Data

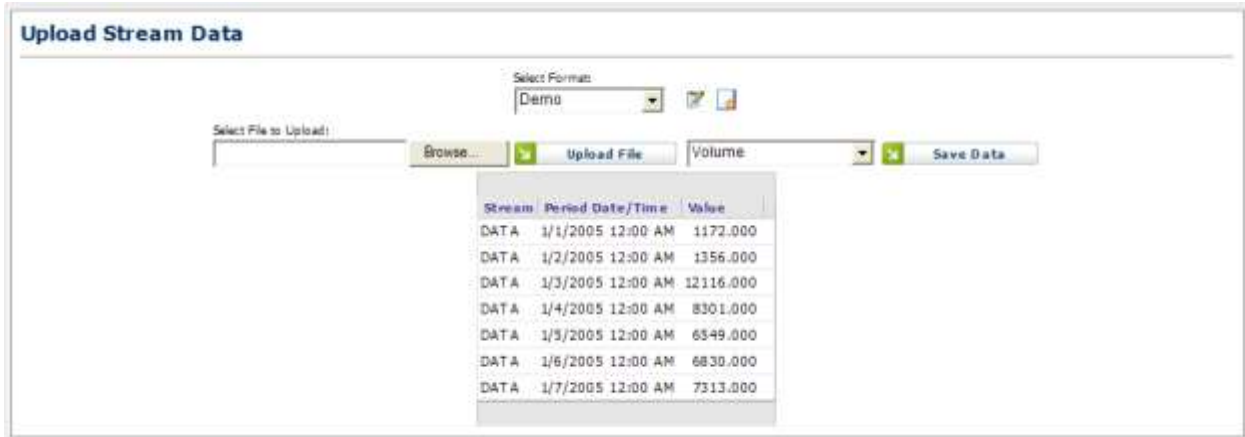
The *Upload Stream Data* Module imports the data into the stream data tables in the database. The *Upload Stream Data* page should appear similar to as shown in Figure 9.7.



**Figure 9.7 - Upload Stream Data**

The data file must first be selected from the local file system using the *File Open* dialog that appears after pressing the *Browse* button. Next, the file can be uploaded by selecting the *Upload File* button. The data will be loaded into the page similar to as shown in Figure 9.8.

After the data is verified, the *Save Data* button must be clicked in order to update the data in the database.



**Figure 9.8 – Upload Stream Data**

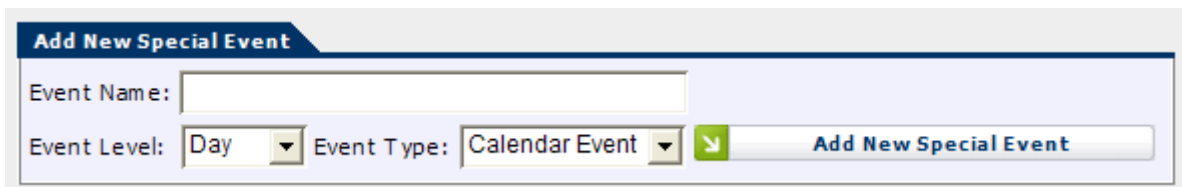
## 9.2. Special Events

New special events can be added and special events data may be updated using the *Manage Special Events Data* page. The Update Special Events Data page can be reached by selecting the Special Events Data item in the *Database-Manage* menu.

### 9.2.1. Manage Special Events

#### 9.2.1.1. Add New Special Event

A New Special Event can be added using the *Add New Special Event* area in the *Update Special Events Data* page. An event name must be entered, and an event type must be selected. The event can then be added by selecting the *Add Event* button. The new event will immediately appear in the list of events.



**Figure 9.9 – Add New Special Events**

*Event Type* can be selected from the drop-down menu. The event types available include the following:

- Calendar Event: An event that occurs at certain dates (e.g. first day of a month).
- Planned Event: An event that is created and scheduled by the user's organization.

*Event Level* can be selected as well. This will let you configure daily, weekly and monthly Special Events. A Daily Event is applied to daily forecasts. Monthly events are applied to monthly forecasts, and so on.

Clicking on the *Add New Special Event* button adds the new event.

### 9.2.1.2. Edit Special Event

To edit a Special Event, click on the *Pencil* icon next to the event type. Then change the Event Name, Event Level or Event Type, and click the *Check Mark* icon to save. Clicking the *Red X* icon will cancel the edit.

### 9.2.1.3. Delete Special Event

To delete a Special Event, check the box to the left of the event name and click on the *Delete* button. Or click on the *Trash Can* icon for any event.

## 9.2.2. Update Special Events Data

Special events and dates of occurrence are entered using the *Manage Special Events Data* page as shown in Figure 9.10. Days on which a special event occurs can be entered by checking the boxes in the row corresponding to that event and the dates shown. If the date is not shown on the page, you can navigate to the next or previous pages using the *Next* and *Previous* links, or by selecting a date in the calendar at the top of the page. The dates entered are automatically saved into the database. If a day is marked for an event incorrectly, it should be unchecked. New event status on that day will again be saved automatically.

**Update Special Events Data**

< December 2006 January 2007 >

Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2	1	2	3	4	5	6	
3	4	5	6	7	8	9	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28	29	30	31			
31													

Jump To: 1 2000 Go

Event	Event Level	Event Type	12/03	12/04	12/05	12/06	12/07	12/08	12/09	12/10	12/11	12/12	12/13	12/14	12/15	12/16
<input type="checkbox"/> Friday after Memorial Day	Day	Calendar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Friday before Memorial Day	Day	Calendar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Monday before Memorial Day	Day	Calendar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 3rd Friday before Christmas	Day	Calendar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> 3rd Monday before Christmas	Day	Calendar	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sunday after Memorial Day	Day	Calendar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sunday before Memorial Day	Day	Calendar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> i_TNA	Day	Planned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> i_WWE	Day	Planned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 9.10 – Update Special Events Data