# Crash

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ii CONTENTS

# Contents

| 1                 | cras  | sh 1   |          |  |  |  |  |
|-------------------|-------|--|----------|--|--|--|--|
| 2 Namespace Index |       |  |          |  |  |  |  |
|                   | 2.1   | Packages                                     | 1        |  |  |  |  |
| 3                 | Hiera | rarchical Index                              | 1        |  |  |  |  |
|                   | 3.1   | Class Hierarchy                              | 1        |  |  |  |  |
| 4                 | Clas  | ss Index                                     | 2        |  |  |  |  |
| •                 | 4.1   | Class List                                   |          |  |  |  |  |
|                   | •••   |  | _        |  |  |  |  |
| 5                 | File  | Index  | 2        |  |  |  |  |
|                   | 5.1   | File List                                    | 2        |  |  |  |  |
| 6                 | Nam   | nespace Documentation                        | 2        |  |  |  |  |
|                   | 6.1   | crash Namespace Reference                    | 2        |  |  |  |  |
|                   | 6.2   | crash.Proto Namespace Reference              | 3        |  |  |  |  |
| 7                 | Clas  | ss Documentation                             | 3        |  |  |  |  |
|                   | 7.1   | crash.FormConnect Class Reference            | 3        |  |  |  |  |
|                   |       | 7.1.1 Detailed Description                   | 4        |  |  |  |  |
|                   |       | 7.1.2 Constructor & Destructor Documentation | 4        |  |  |  |  |
|                   |       | 7.1.3 Member Function Documentation          | 4        |  |  |  |  |
|                   |       | 7.1.4 Member Data Documentation              | 7        |  |  |  |  |
|                   | 7.2   | crash.FormMain Class Reference               | 9        |  |  |  |  |
|                   |       | 7.2.1 Detailed Description                   | 10       |  |  |  |  |
|                   |       | 7.2.2 Constructor & Destructor Documentation | 10       |  |  |  |  |
|                   |       | 7.2.3 Member Function Documentation          | 11       |  |  |  |  |
|                   |       | 7.2.4 Member Data Documentation              | 21       |  |  |  |  |
|                   | 7.3   | crash.Proto.Message Class Reference          | 24       |  |  |  |  |
|                   |       | 7.3.1 Detailed Description                   | 24       |  |  |  |  |
|                   |       | 7.3.2 Constructor & Destructor Documentation | 24       |  |  |  |  |
|                   |       | 7.3.3 Member Function Documentation          |          |  |  |  |  |
|                   |       | 7.3.4 Member Data Documentation              |          |  |  |  |  |
|                   | 7.4   | crash.NetService Class Reference             |          |  |  |  |  |
|                   |       | 7.4.1 Detailed Description                   |          |  |  |  |  |
|                   |       | 7.4.2 Constructor & Destructor Documentation |          |  |  |  |  |
|                   |       | 7.4.3 Member Function Documentation          |          |  |  |  |  |
|                   | 7.5   | 7.4.4 Member Data Documentation              | 32<br>33 |  |  |  |  |
|                   | 1.0   | 7.5.1 Detailed Description                   | 33       |  |  |  |  |
|                   |       | 7.5.1 Detailed Description                   |          |  |  |  |  |
|                   |       | 7.0.2 Monisor Fundion Doumonation            | 00       |  |  |  |  |

1 crash

| 8           | File    | Documentation  | 34 |
|-------------|---------|--|----|
|             | 8.1     | /home/drb/dev/cs/crash/FormConnect.cs File Reference                 | 34 |
|             | 8.2     | /home/drb/dev/cs/crash/FormConnect.Designer.cs File Reference        | 34 |
|             | 8.3     | /home/drb/dev/cs/crash/FormMain.cs File Reference                    | 34 |
|             | 8.4     | /home/drb/dev/cs/crash/FormMain.Designer.cs File Reference           | 34 |
|             | 8.5     | /home/drb/dev/cs/crash/NetService.cs File Reference                  | 35 |
|             | 8.6     | /home/drb/dev/cs/crash/NetService_IO.cs File Reference               | 35 |
|             | 8.7     | /home/drb/dev/cs/crash/Program.cs File Reference                     | 35 |
|             | 8.8     | /home/drb/dev/cs/crash/Proto.cs File Reference                       | 35 |
|             | 8.9     | /home/drb/dev/cs/crash/README.md File Reference                      | 35 |
| Ind         | dex     |  | 37 |
| 1           | cra     | nsh  |    |
| Co          | ntrolle | er application for Burn  |    |
| 2           | Na      | mespace Index  |    |
| 2.1         | Pa      | ckages   |    |
| He          | re are  | the packages with brief descriptions (if available):                 |    |
|             | cras    | h  | 2  |
|             | cras    | h.Proto  | 3  |
| 3           | Hie     | erarchical Index   |    |
| <b>3.</b> 1 | Cla     | ass Hierarchy  |    |
| Th          | is inhe | eritance list is sorted roughly, but not completely, alphabetically: |    |
|             | Form    | 1  |    |
|             | С       | rash.FormConnect   | 3  |
|             |         | rash.FormMain  | 9  |
|             | cras    | h.Proto.Message  | 24 |

| 2   | CONTENTS |
|---|----------|
| crash.NetService  | 26       |
| crash.Program   | 33       |
| orașii.i rogium   | 33       |
| 4 Class Index   |          |
| 4.1 Class List  |          |
| Here are the classes, structs, unions and interfaces with brief descriptions: |          |
| crash.FormConnect   | 3        |
| crash.FormMain  | 9        |
| crash.Proto.Message   | 24       |
| crash.NetService  | 26       |
| crash.Program   | 33       |
| 5 File Index  |          |
| 5.1 File List   |          |
| Here is a list of all files with brief descriptions:                          |          |
| /home/drb/dev/cs/crash/FormConnect.cs   | 34       |
| /home/drb/dev/cs/crash/FormConnect.Designer.cs                                | 34       |
| /home/drb/dev/cs/crash/FormMain.cs  | 34       |
| /home/drb/dev/cs/crash/FormMain.Designer.cs                                   | 34       |
| /home/drb/dev/cs/crash/NetService.cs  | 35       |
| /home/drb/dev/cs/crash/NetService_IO.cs                                       | 35       |
| /home/drb/dev/cs/crash/Program.cs   | 35       |
| /home/drb/dev/cs/crash/Proto.cs   | 35       |
| 6 Namespace Documentation   |          |
| 6.1 crash Namespace Reference   |          |
| Namespaces  |          |

• namespace Proto

### Classes

- class FormConnect
- class FormMain
- class NetService
- class Program

# 6.2 crash.Proto Namespace Reference

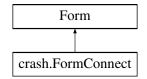
### Classes

· class Message

# 7 Class Documentation

# 7.1 crash.FormConnect Class Reference

Inheritance diagram for crash.FormConnect:



# **Public Member Functions**

• FormConnect ()

### **Public Attributes**

- string IP
- string Port

### **Protected Member Functions**

override void Dispose (bool disposing)
 Clean up any resources being used.

#### **Private Member Functions**

- void <a href="bthbc">btnCancel\_Click</a> (object sender, EventArgs e)
- void <a href="bthbb">btnOk\_Click</a> (object sender, EventArgs e)
- void InitializeComponent ()

Required method for Designer support - do not modify the contents of this method with the code editor.

#### **Private Attributes**

- System.ComponentModel.IContainer components = null Required designer variable.
- · System.Windows.Forms.Panel panel1
- System.Windows.Forms.Panel panel2
- System.Windows.Forms.Panel panel3
- System.Windows.Forms.Label label1
- · System.Windows.Forms.Panel panel4
- System.Windows.Forms.TextBox tbIP
- System.Windows.Forms.Label label2
- System.Windows.Forms.TextBox tbPort
- · System.Windows.Forms.Button btnCancel
- System.Windows.Forms.Button btnOk

# 7.1.1 Detailed Description

Definition at line 14 of file FormConnect.cs.

- 7.1.2 Constructor & Destructor Documentation
- 7.1.2.1 crash.FormConnect.FormConnect()

Definition at line 19 of file FormConnect.cs.

References crash.FormConnect.InitializeComponent().

- 7.1.3 Member Function Documentation
- 7.1.3.1 void crash.FormConnect.btnCancel\_Click ( object sender, EventArgs e ) [private]

Definition at line 24 of file FormConnect.cs.

7.1.3.2 void crash.FormConnect.btnOk\_Click ( object sender, EventArgs e ) [private]

Definition at line 30 of file FormConnect.cs.

References crash.FormConnect.tbIP, and crash.FormConnect.tbPort.

```
31
32
               if (String.IsNullOrEmpty(tbIP.Text))
33
                   MessageBox.Show("No IP address provided");
35
36
37
38
               if (String.IsNullOrEmpty(tbPort.Text))
39
                   MessageBox.Show("No port provided");
41
42
43
               IP = tbIP.Text;
44
               Port = tbPort.Text;
               DialogResult = DialogResult.OK;
48
           }
```

7.1.3.3 override void crash.FormConnect.Dispose ( bool disposing ) [protected]

Clean up any resources being used.

#### **Parameters**

```
disposing true if managed resources should be disposed; otherwise, false.
```

Definition at line 14 of file FormConnect.Designer.cs.

References crash.FormConnect.components.

**7.1.3.4 void crash.FormConnect.InitializeComponent()** [private]

Required method for Designer support - do not modify the contents of this method with the code editor.

Definition at line 29 of file FormConnect.Designer.cs.

References crash.FormConnect.btnCancel, crash.FormConnect.btnCancel\_Click(), crash.FormConnect.btn ← Ok, crash.FormConnect.btnOk\_Click(), crash.FormConnect.label1, crash.FormConnect.label2, crash.FormConnect.panel3, crash.FormConnect.panel4, crash.← FormConnect.btlP, and crash.FormConnect.tbPort.

```
30
                this.panel1 = new System.Windows.Forms.Panel();
31
32
                this.btnCancel = new System.Windows.Forms.Button();
33
                 this.btnOk = new System.Windows.Forms.Button();
                this.panel2 = new System.Windows.Forms.Panel();
34
                 this.panel3 = new System.Windows.Forms.Panel();
35
                 this.label2 = new System.Windows.Forms.Label();
36
                 this.label1 = new System.Windows.Forms.Label();
37
38
                 this.panel4 = new System.Windows.Forms.Panel();
                 this.tbPort = new System.Windows.Forms.TextBox();
39
                 this.tbIP = new System.Windows.Forms.TextBox();
40
                this.panel1.SuspendLayout();
41
                 this.panel3.SuspendLayout();
42
                 this.panel4.SuspendLayout();
43
44
                this.SuspendLayout();
                //
// panel1
4.5
46
47
48
                this.panel1.Controls.Add(this.btnCancel);
                 this.panel1.Controls.Add(this.btnOk);
                 this.panel1.Dock = System.Windows.Forms.DockStyle.Bottom;
50
51
                 this.panel1.Location = new System.Drawing.Point(0, 109);
                this.panell.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
this.panell.Name = "panell";
52
5.3
                 this.panel1.Size = new System.Drawing.Size(362, 28);
54
                this.panel1.TabIndex = 0;
55
56
57
                 // btnCancel
58
59
                this.btnCancel.Dock = System.Windows.Forms.DockStyle.Right;
                this.btnCancel.Location = new System.Drawing.Point(162, 0);
60
                this.btnCancel.Margin = new System.Windows.Forms.Padding(4, 4, 4);
this.btnCancel.Name = "btnCancel";
this.btnCancel.Size = new System.Drawing.Size(100, 28);
61
6.3
                this.btnCancel.TabIndex = 1;
this.btnCancel.Text = "Cancel";
64
65
                this.btnCancel.UseVisualStyleBackColor = true;
66
67
                this.btnCancel.Click += new System.EventHandler(this.
      btnCancel_Click);
68
                //
                // btnOk
69
70
                this.btnOk.Dock = System.Windows.Forms.DockStyle.Right;
71
72
                this.btnOk.Location = new System.Drawing.Point(262, 0);
                 this.btnOk.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
74
                 this.btnOk.Name = "btnOk";
75
                this.btnOk.Size = new System.Drawing.Size(100, 28);
                this.btnOk.TabIndex = 0;
this.btnOk.Text = "Ok";
76
77
                this.btnOk.UseVisualStyleBackColor = true;
78
79
                this.btnOk.Click += new System.EventHandler(this.
      btnOk_Click);
80
                11
81
                 // panel2
82
83
                this.panel2.Dock = System.Windows.Forms.DockStyle.Top;
                 this.panel2.Location = new System.Drawing.Point(0, 0);
                 this.panel2.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
85
                this.panel2.Name = "panel2";
this.panel2.Size = new System.Drawing.Size(362, 21);
86
87
                this.panel2.TabIndex = 1;
88
89
90
                 // pane13
91
92
                 this.panel3.Controls.Add(this.label2);
93
                 this.panel3.Controls.Add(this.label1);
94
                 this.panel3.Dock = System.Windows.Forms.DockStyle.Left;
                 this.panel3.Location = new System.Drawing.Point(0, 21);
95
                this.panel3.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
96
                this.panel3.NargIm = "panel3";
this.panel3.Size = new System.Drawing.Size(133, 88);
98
99
                this.panel3.TabIndex = 2;
100
                  //
                 // label2
101
102
103
                 this.label2.AutoSize = true;
104
                  this.label2.Dock = System.Windows.Forms.DockStyle.Top;
105
                  this.label2.Location = new System.Drawing.Point(0, 25);
                 this.label2.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
this.label2.Name = "label2";
106
107
                 this.label2.Padding = new System.Windows.Forms.Padding(4, 4, 4, 4);
108
                  this.label2.Size = new System.Drawing.Size(42, 25);
109
                  this.label2.TabIndex = 1;
110
111
                 this.label2.Text = "Port";
                 //
// label1
112
113
114
                  11
```

```
115
                  this.label1.AutoSize = true;
                  this.label1.Dock = System.Windows.Forms.DockStyle.Top;
116
117
                  this.label1.Location = new System.Drawing.Point(0, 0);
                  this.labell.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
this.labell.Name = "labell";
118
119
                  this.labell.Padding = new System.Windows.Forms.Padding(4, 4, 4, 4);
this.labell.Size = new System.Drawing.Size(83, 25);
120
121
                  this.label1.TabIndex = 0;
122
123
                  this.label1.Text = "IP address";
124
125
                  // panel4
126
                  this.panel4.Controls.Add(this.tbPort);
127
128
                  this.panel4.Controls.Add(this.tbIP);
129
                  this.panel4.Dock = System.Windows.Forms.DockStyle.Fill;
130
                  this.panel4.Location = new System.Drawing.Point(133, 21);
                  this.panel4.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
this.panel4.Name = "panel4";
this.panel4.Size = new System.Drawing.Size(229, 88);
131
132
133
134
                  this.panel4.TabIndex = 3;
135
                  // tbPort
136
137
                  this.tbPort.Dock = System.Windows.Forms.DockStyle.Top;
138
                  this.tbPort.Location = new System.Drawing.Point(0, 23);
139
                  this.tbPort.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
140
141
                  this.tbPort.Name = "tbPort";
142
                  this.tbPort.Size = new System.Drawing.Size(229, 23);
143
                  this.tbPort.TabIndex = 1;
144
                  // tbIP
145
146
147
                  this.tbIP.Dock = System.Windows.Forms.DockStyle.Top;
148
                  this.tbIP.Location = new System.Drawing.Point(0, 0);
                  this.tbIP.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
this.tbIP.Name = "tbIP";
149
150
                  this.tbIP.Size = new System.Drawing.Size(229, 23);
151
                  this.tbIP.TabIndex = 0;
152
153
154
                  // FormConnect
155
                  this.AutoScaleDimensions = new System.Drawing.SizeF(8F, 16F);
156
157
                  this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;
                  this.ClientSize = new System.Drawing.Size(362, 137);
158
                  this.Controls.Add(this.panel4);
159
                  this.Controls.Add(this.panel3);
160
161
                  this.Controls.Add(this.panel2);
162
                  this.Controls.Add(this.panel1);
                  this.Font = new System.Drawing.Font("Microsoft Sans Serif", 10F,
163
      System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point, ((byte)(0)));
                  this.Margin = new System.Windows.Forms.Padding(4, 4, 4, 4);
164
                  this.MaximizeBox = false;
this.MinimizeBox = false;
165
166
167
                  this.Name = "FormConnect";
                  this.StartPosition = System.Windows.Forms.FormStartPosition.CenterParent;
this.Text = "Crash - Connect";
this.panell.ResumeLayout(false);
168
169
170
                  this.panel3.ResumeLayout(false);
171
172
                  this.panel3.PerformLayout();
173
                  this.panel4.ResumeLayout(false);
174
                  this.panel4.PerformLayout();
175
                  this.ResumeLayout (false);
```

# 7.1.4 Member Data Documentation

#### 7.1.4.1 System.Windows.Forms.Button crash.FormConnect.btnCancel [private]

Definition at line 189 of file FormConnect.Designer.cs.

#### 7.1.4.2 System.Windows.Forms.Button crash.FormConnect.btnOk [private]

Definition at line 190 of file FormConnect.Designer.cs.

7.1.4.3 System.ComponentModel.IContainer crash.FormConnect.components = null [private]

Required designer variable.

Definition at line 8 of file FormConnect.Designer.cs.

7.1.4.4 string crash.FormConnect.IP

Definition at line 16 of file FormConnect.cs.

7.1.4.5 System.Windows.Forms.Label crash.FormConnect.label1 [private]

Definition at line 184 of file FormConnect.Designer.cs.

**7.1.4.6 System.Windows.Forms.Label crash.FormConnect.label2** [private]

Definition at line 187 of file FormConnect.Designer.cs.

**7.1.4.7 System.Windows.Forms.Panel crash.FormConnect.panel1** [private]

Definition at line 181 of file FormConnect.Designer.cs.

**7.1.4.8 System.Windows.Forms.Panel crash.FormConnect.panel2** [private]

Definition at line 182 of file FormConnect.Designer.cs.

**7.1.4.9 System.Windows.Forms.Panel crash.FormConnect.panel3** [private]

 $\label{lem:connect.Designer.cs.} Definition \ at \ line \ 183 \ of \ file \ Form Connect. Designer.cs.$ 

7.1.4.10 System.Windows.Forms.Panel crash.FormConnect.panel4 [private]

Definition at line 185 of file FormConnect.Designer.cs.

7.1.4.11 string crash.FormConnect.Port

Definition at line 17 of file FormConnect.cs.

**7.1.4.12** System.Windows.Forms.TextBox crash.FormConnect.tblP [private]

Definition at line 186 of file FormConnect.Designer.cs.

**7.1.4.13 System.Windows.Forms.TextBox crash.FormConnect.tbPort** [private]

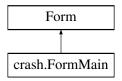
Definition at line 188 of file FormConnect.Designer.cs.

The documentation for this class was generated from the following files:

- /home/drb/dev/cs/crash/FormConnect.cs
- /home/drb/dev/cs/crash/FormConnect.Designer.cs

### 7.2 crash.FormMain Class Reference

Inheritance diagram for crash.FormMain:



#### **Public Member Functions**

• FormMain ()

#### **Protected Member Functions**

• override void Dispose (bool disposing)

Clean up any resources being used.

#### **Private Member Functions**

- void FormMain Load (object sender, EventArgs e)
- void timer\_Tick (object sender, EventArgs e)
- void FormMain\_FormClosing (object sender, FormClosingEventArgs e)
- · bool dispatchRecvMsg (Proto.Message msg)
- void log (string message)
- void menultemExit Click (object sender, EventArgs e)
- void menultemConnect\_Click (object sender, EventArgs e)
- void menultemDisconnect\_Click (object sender, EventArgs e)
- void btnSendHello\_Click (object sender, EventArgs e)
- void btnSendClose\_Click (object sender, EventArgs e)
- void btnSendSession\_Click (object sender, EventArgs e)
- void btnSendFix\_Click (object sender, EventArgs e)
- void btnStopNetService\_Click (object sender, EventArgs e)
- void btnGetPreview\_Click (object sender, EventArgs e)
- void btnSetGain\_Click (object sender, EventArgs e)
- void InitializeComponent ()

Required method for Designer support - do not modify the contents of this method with the code editor.

### **Private Attributes**

- FormConnect formConnect = new FormConnect()
- System.Windows.Forms.Timer timer = new System.Windows.Forms.Timer()
- System.ComponentModel.IContainer components = null

Required designer variable.

- System.Windows.Forms.MenuStrip menu
- System.Windows.Forms.StatusStrip status
- System.Windows.Forms.ToolStrip tools
- System.Windows.Forms.ToolStripMenuItem menuItemFile
- System.Windows.Forms.ToolStripMenuItem menuItemExit

- System.Windows.Forms.ToolStripButton btnConnect
- System.Windows.Forms.ToolStripMenuItem menuItemConnect
- System.Windows.Forms.ToolStripMenuItem menuItemDisconnect
- System.Windows.Forms.ToolStripSeparator toolStripSeparator1
- System.Windows.Forms.ToolStripButton btnDisconnect
- System.Windows.Forms.ToolStripStatusLabel statusLabel
- System.Windows.Forms.ToolStripLabel lblConnectionStatus
- · System.Windows.Forms.TabControl tabs
- System.Windows.Forms.TabPage pageSettings
- System.Windows.Forms.TabPage pageSpectrometry
- System.Windows.Forms.Button btnSendClose
- System.Windows.Forms.Button btnSendHello
- · System.Windows.Forms.TextBox tbLog
- System.Windows.Forms.Button btnSendSession
- System.Windows.Forms.Button btnStopNetService
- System.Windows.Forms.Button btnSendFix
- System.Windows.Forms.Button btnGetPreview
- System.Windows.Forms.Button btnSetGain
- System.Windows.Forms.TextBox tbFineGain
- System.Windows.Forms.TextBox tbCoarseGain
- System.Windows.Forms.TextBox tbVoltage
- System.Windows.Forms.TextBox tbSpecLivetime
- System.Windows.Forms.TextBox tbSpecCount
- System.Windows.Forms.Panel panel2
- · System.Windows.Forms.Panel panel1

#### **Static Private Attributes**

- static ConcurrentQueue
   Proto.Message > sendq = new ConcurrentQueue
   Proto.Message > ()
- static ConcurrentQueue < Proto.Message > recvq = new ConcurrentQueue < Proto.Message > ()
- static NetService netService = new NetService(sendg, recvg)
- static Thread netThread = new Thread(netService.DoWork)

### 7.2.1 Detailed Description

Definition at line 33 of file FormMain.cs.

# 7.2.2 Constructor & Destructor Documentation

```
7.2.2.1 crash.FormMain.FormMain()
```

Definition at line 44 of file FormMain.cs.

 $References\ crash. Form Main. Initialize Component ().$ 

```
45 {
46 InitializeComponent();
47 }
```

#### 7.2.3 Member Function Documentation

7.2.3.1 void crash.FormMain.btnGetPreview\_Click( object sender, EventArgs e ) [private]

Definition at line 209 of file FormMain.cs.

References crash.FormMain.sendq, crash.FormMain.tbSpecCount, and crash.FormMain.tbSpecLivetime.

```
210
                  if (String.IsNullOrEmpty(tbSpecCount.Text))
212
213
                      MessageBox.Show("Mangler count");
214
                      return;
215
216
217
                  if (String.IsNullOrEmpty(tbSpecLivetime.Text))
218
219
                      MessageBox.Show("Mangler livetime");
220
221
                 }
223
                 int count = Convert.ToInt32(tbSpecCount.Text);
224
                 float livetime = Convert.ToInt32(tbSpecLivetime.Text);
225
226
                 for(int i=0; i<count; i++)</pre>
227
                      Proto.Message msg = new Proto.Message("get_preview_spec");
msg.AddParameter("livetime", livetime);
228
229
                      sendq.Enqueue(msg);
231
232
             }
```

7.2.3.2 void crash.FormMain.btnSendClose\_Click ( object sender, EventArgs e ) [private]

Definition at line 188 of file FormMain.cs.

References crash.FormMain.sendq.

7.2.3.3 void crash.FormMain.btnSendFix\_Click ( object sender, EventArgs e ) [private]

Definition at line 198 of file FormMain.cs.

References crash.FormMain.sendq.

7.2.3.4 void crash.FormMain.btnSendHello\_Click ( object sender, EventArgs e ) [private]

Definition at line 183 of file FormMain.cs.

References crash.FormMain.sendq.

7.2.3.5 void crash.FormMain.btnSendSession\_Click ( object sender, EventArgs e ) [private]

Definition at line 193 of file FormMain.cs.

References crash.FormMain.sendq.

7.2.3.6 void crash.FormMain.btnSetGain\_Click ( object sender, EventArgs e ) [private]

Definition at line 234 of file FormMain.cs.

References crash.FormMain.sendq, crash.FormMain.tbCoarseGain, crash.FormMain.tbFineGain, and crash.← FormMain.tbVoltage.

```
235
236
                  if (String.IsNullOrEmpty(tbVoltage.Text))
237
238
                       MessageBox.Show("Mangler voltage");
239
                       return:
240
                  }
241
242
                  if (String.IsNullOrEmpty(tbCoarseGain.Text))
243
244
                       MessageBox.Show("Mangler coarse gain");
245
246
                  }
247
248
                  if (String.IsNullOrEmpty(tbFineGain.Text))
249
250
                       MessageBox.Show("Mangler fine gain");
251
252
253
                  int voltage = Convert.ToInt32(tbVoltage.Text);
254
255
                  float coarse = Convert.ToInt32(tbCoarseGain.Text);
256
                  float fine = Convert.ToInt32(tbFineGain.Text);
257
                  Proto.Message msg = new Proto.Message("set_gain");
msg.AddParameter("voltage", voltage);
msg.AddParameter("coarse_gain", coarse);
258
259
261
                  msg.AddParameter("fine_gain", fine);
262
                  sendq.Enqueue(msg);
263
```

7.2.3.7 void crash.FormMain.btnStopNetService\_Click ( object sender, EventArgs e ) [private]

Definition at line 203 of file FormMain.cs.

References crash.NetService.RequestStop().

### 7.2.3.8 bool crash.FormMain.dispatchRecvMsg ( Proto.Message msg ) [private]

Definition at line 79 of file FormMain.cs.

References crash.FormMain.lblConnectionStatus, crash.FormMain.log(), and crash.NetService.RequestStop().

```
80
                 switch (msg.command)
81
82
83
                      case "connect_ok":
                          lblConnectionStatus.ForeColor = Color.Green;
84
                          lblConnectionStatus.Text = "Connected to " + msg.arguments["host"] +
85
        ":" + msg.arguments["port"];
86
                          log("Connected to " + msg.arguments["host"] + ":" + msg.arguments["port"]);
87
88
89
                      case "connect_failed":
                          lblConnectionStatus.ForeColor = Color.Red;
90
       | lblConnectionStatus.Text = "Connection failed for " + msg.arguments["host"] + ":" + msg.arguments["port"] + " " + msg.arguments["message"];
91
                          log("Connection failed for " + msg.arguments["host"] + ":" + msg.arguments["port"] +
92
        " " + msg.arguments["message"]);
93
                          break;
94
                     case "disconnect_ok":
95
                          lblConnectionStatus.ForeColor = Color.Red;
96
                          lblConnectionStatus.Text = "Not connected";
97
98
                          log("Disconnected from peer");
99
                          break;
100
                       case "close ok":
101
                           netService.RequestStop();
102
103
                            netThread.Join();
104
                            lblConnectionStatus.ForeColor = Color.Red;
105
                            lblConnectionStatus.Text = "Not connected";
                            log("Disconnected from peer, peer closed");
106
107
                           break:
108
109
                       case "new_session_ok":
                            log("New session created: " + msg.arguments["session_name"]);
111
112
                       case "new session failed":
113
114
                           log("New session failed: " + msg.arguments["message"]);
115
                            break;
116
117
                       case "error":
118
                           log("Error: " + msg.arguments["message"]);
119
                           break:
120
                       case "error_socket":
121
                            log("Socket error: " + msg.arguments["error_code"] + " " + msg.arguments["message"])
122
123
                           break:
124
                       case "get_fix_ok":
    log("GPS Fix - Lat: " + msg.arguments["latitude"] + " Lon: " + msg.arguments["
125
126
       longitude"] + " Alt: " + msg.arguments["altitude"]);
127
128
129
                       case "set_gain_ok":
    log("set gain: " + msg.arguments["voltage"] + " " + msg.arguments["coarse_gain"] + "
130
        " + msg.arguments["fine_gain"]);
131
                           break;
132
133
                       case "get_preview_spec_ok":
                           134
135
                                " channel count: " + msg.arguments["channel_count"] +
" computational limit: " + msg.arguments["computational_limit"] +
136
137
                                " status: " + msg.arguments["status"] +
" livetime: " + msg.arguments["livetime"] +
" realtime: " + msg.arguments["realtime"]);
138
139
140
                            log(msg.arguments["channels"]);
141
                            log(miss.drgments | Chamnels | ),
string[] items = msg.arguments["channels"].Split(new char[] {' '});
log("Items: " + items.Length.ToString());
142
143
144
                            break;
145
146
                       default.
                            string info = msg.command + " -> ";
147
                            foreach (KeyValuePair<string, string> item in msg.arguments)
  info += item.Key + ":" + item.Value + ", ";
148
149
150
                            log("Unhandeled command: " + info);
```

```
151 break;
152 }
153 return true;
154 }
```

**7.2.3.9 override void crash.FormMain.Dispose (bool** disposing ) [protected]

Clean up any resources being used.

#### **Parameters**

```
disposing true if managed resources should be disposed; otherwise, false.
```

Definition at line 14 of file FormMain.Designer.cs.

References crash.FormMain.components.

7.2.3.10 void crash.FormMain\_FormClosing ( object sender, FormClosingEventArgs e ) [private]

Definition at line 72 of file FormMain.cs.

References crash.FormMain.btnStopNetService\_Click(), crash.NetService.lsRunning(), and crash.FormMain.timer.

**7.2.3.11** void crash.FormMain.FormMain\_Load ( object sender, EventArgs e ) [private]

Definition at line 49 of file FormMain.cs.

References crash.FormMain.lblConnectionStatus, crash.FormMain.timer, and crash.FormMain.timer\_Tick().

```
7.2.3.12 void crash.FormMain.InitializeComponent() [private]
```

Required method for Designer support - do not modify the contents of this method with the code editor.

Definition at line 29 of file FormMain.Designer.cs.

```
30
31
               System.ComponentModel.ComponentResourceManager resources = new
      System.ComponentModel.ComponentResourceManager(typeof(FormMain));
32
               this.menu = new System.Windows.Forms.MenuStrip();
               this.menuItemFile = new System.Windows.Forms.ToolStripMenuItem();
33
               this.menuItemConnect = new System.Windows.Forms.ToolStripMenuItem();
               this.menuItemDisconnect = new System.Windows.Forms.ToolStripMenuItem();
35
36
               this.toolStripSeparator1 = new System.Windows.Forms.ToolStripSeparator
      ();
37
               this.menuItemExit = new System.Windows.Forms.ToolStripMenuItem();
38
               this.status = new System.Windows.Forms.StatusStrip();
39
               this.statusLabel = new System.Windows.Forms.ToolStripStatusLabel();
               this.tools = new System.Windows.Forms.ToolStrip();
41
               this.btnConnect = new System.Windows.Forms.ToolStripButton();
42
               this.btnDisconnect = new System.Windows.Forms.ToolStripButton();
               this.lblConnectionStatus = new System.Windows.Forms.ToolStripLabel();
43
               this.tabs = new System.Windows.Forms.TabControl();
44
               this.pageSettings = new System.Windows.Forms.TabPage();
45
46
               this.btnSetGain = new System.Windows.Forms.Button();
47
               this.btnGetPreview = new System.Windows.Forms.Button();
48
               this.btnSendFix = new System.Windows.Forms.Button();
               this.btnStopNetService = new System.Windows.Forms.Button();
49
               this.btnSendSession = new System.Windows.Forms.Button();
50
               this.btnSendClose = new System.Windows.Forms.Button();
51
               this.btnSendHello = new System.Windows.Forms.Button();
               this.tbLog = new System.Windows.Forms.TextBox();
54
               this.pageSpectrometry = new System.Windows.Forms.TabPage();
55
               this.tbSpecCount = new System.Windows.Forms.TextBox();
               this.tbSpecLivetime = new System.Windows.Forms.TextBox();
56
               this.panel1 = new System.Windows.Forms.Panel();
               this.panel2 = new System.Windows.Forms.Panel();
               this.tbVoltage = new System.Windows.Forms.TextBox();
60
               this.tbCoarseGain = new System.Windows.Forms.TextBox();
61
               this.tbFineGain = new System.Windows.Forms.TextBox();
62
               this.menu.SuspendLavout();
63
               this.status.SuspendLavout();
               this.tools.SuspendLayout();
               this.tabs.SuspendLayout();
65
66
               this.pageSettings.SuspendLayout();
67
               this.panel1.SuspendLayout();
68
               this.panel2.SuspendLayout();
69
               this.SuspendLayout();
70
72
73
               this.menu.Items.AddRange(new System.Windows.Forms.ToolStripItem[] {
74
               this.menuItemFile );
75
               this.menu.Location = new System.Drawing.Point(0, 0);
76
               this.menu.Name = "menu";
               this.menu.Padding = new System.Windows.Forms.Padding(8, 2, 0, 2);
77
78
               this.menu.Size = new System.Drawing.Size(1129, 24);
79
               this.menu.TabIndex = 0;
80
               this.menu.Text = "menuStrip1";
81
82
               // menuItemFile
```

```
84
                this.menuItemFile.DropDownItems.AddRange(new System.Windows.Forms.
      ToolStripItem[] {
85
                this.menuItemConnect,
86
                this.menuItemDisconnect,
87
                this.toolStripSeparator1,
88
                this.menuItemExit });
                this.menuItemFile.Name = "menuItemFile";
89
                this.menuItemFile.Size = new System.Drawing.Size(37, 20);
90
                this.menuItemFile.Text = "&File";
91
92
                // menuItemConnect
93
94
                this.menuItemConnect.Name = "menuItemConnect";
95
                this.menuItemConnect.Size = new System.Drawing.Size(133, 22);
96
                this.menuItemConnect.Text = "&Connect";
97
                this.menuItemConnect.Click += new System.EventHandler(this.
98
      menuItemConnect Click);
99
                // menuItemDisconnect
100
101
                 this.menuItemDisconnect.Name = "menuItemDisconnect";
102
                 this.menuItemDisconnect.Size = new System.Drawing.Size(133, 22);
this.menuItemDisconnect.Text = "&Disconnect";
103
104
                 this.menuItemDisconnect.Click += new System.EventHandler(this.
105
      menuItemDisconnect_Click);
106
                //
107
                 // toolStripSeparator1
108
                 this.toolStripSeparator1.Name = "toolStripSeparator1";
109
110
                 this.toolStripSeparator1.Size = new System.Drawing.Size(130, 6);
111
                 // menuItemExit
112
113
114
                 this.menuItemExit.Name = "menuItemExit";
                 this menuItemExit.Size = new System.Drawing.Size(133, 22);
this menuItemExit.Text = "E&xit";
115
116
                 this.menuItemExit.Click += new System.EventHandler(this.
117
      menuItemExit_Click);
118
                 11
119
                 // status
120
                 this.status.Items.AddRange(new System.Windows.Forms.ToolStripItem[] {
121
122
                 this.statusLabell):
123
                 this.status.Location = new System.Drawing.Point(0, 690);
                 this.status.Name = "status";
124
125
                 this.status.Padding = new System.Windows.Forms.Padding(1, 0, 19, 0);
126
                 this.status.Size = new System.Drawing.Size(1129, 22);
127
                 this.status.TabIndex = 1;
                 this.status.Text = "statusStrip1";
128
129
                 // statusLabel
130
131
132
                 this.statusLabel.Name = "statusLabel";
133
                 this.statusLabel.Size = new System.Drawing.Size(0, 17);
134
                 // tools
135
136
137
                 this.tools.Items.AddRange(new System.Windows.Forms.ToolStripItem[] {
138
                 this.btnConnect,
139
                 this.btnDisconnect,
                 this.lblConnectionStatus}):
140
                 this.tools.Location = new System.Drawing.Point(0, 24);
141
                 this.tools.Name = "tools";
this.tools.Size = new System.Drawing.Size(1129, 25);
142
143
144
                 this.tools.TabIndex = 2;
145
                 this.tools.Text = "toolStrip1";
146
                 // btnConnect
147
148
149
                 this.btnConnect.DisplayStyle = System.Windows.Forms.ToolStripItemDisplayStyle.
150
                 this.btnConnect.Image = ((System.Drawing.Image)(resources.GetObject("
      btnConnect.Image")));
151
                 this.btnConnect.ImageTransparentColor = System.Drawing.Color.Magenta;
                 this.btnConnect.Name = "btnConnect";
this.btnConnect.Size = new System.Drawing.Size(23, 22);
152
153
154
                 this.btnConnect.Text = "toolStripButton1";
155
                 this.btnConnect.Click += new System.EventHandler(this.
      menuItemConnect_Click);
156
                 // btnDisconnect
157
158
                 this.btnDisconnect.DisplayStyle = System.Windows.Forms.
159
      ToolStripItemDisplayStyle.Image;
160
                 this.btnDisconnect.Image = ((System.Drawing.Image) (resources.GetObject("
      btnDisconnect.Image")));
161
                 this.btnDisconnect.ImageTransparentColor = System.Drawing.Color.Magenta;
```

```
162
                   this.btnDisconnect.Name = "btnDisconnect";
                   this.btnDisconnect.Size = new System.Drawing.Size(23, 22);
this.btnDisconnect.Text = "toolStripButton1";
163
164
                   this.btnDisconnect.Click += new System.EventHandler(this.
165
       menuItemDisconnect_Click);
166
167
                   // lblConnectionStatus
168
                   this.lblConnectionStatus.Alignment = System.Windows.Forms.
169
       ToolStripItemAlignment.Right;
170
                   this.lblConnectionStatus.Name = "lblConnectionStatus";
                   this.lblConnectionStatus.Size = new System.Drawing.Size(130, 22);
171
                   this.lblConnectionStatus.Text = "<lblConnectionStatus>";
172
173
174
                   // tabs
175
176
                   this.tabs.Controls.Add(this.pageSettings);
177
                   this.tabs.Controls.Add(this.pageSpectrometry);
                   this.tabs.Dock = System.Windows.Forms.DockStyle.Fill;
178
                   this.tabs.Location = new System.Drawing.Point(0, 49);
179
                   this.tabs.Margin = new System.Windows.Forms.Padding(5, 4, 5, 4);
this.tabs.Name = "tabs";
180
181
                   this.tabs.SelectedIndex = 0;
182
                   this.tabs.Size = new System.Drawing.Size(1129, 641);
183
                   this.tabs.TabIndex = 3;
184
185
                   // pageSettings
186
187
188
                   this.pageSettings.BackColor = System.Drawing.SystemColors.ButtonFace;
189
                   this.pageSettings.Controls.Add(this.tbFineGain);
this.pageSettings.Controls.Add(this.tbCoarseGain);
190
191
                   this.pageSettings.Controls.Add(this.tbVoltage);
192
                   this.pageSettings.Controls.Add(this.tbSpecLivetime);
193
                   this.pageSettings.Controls.Add(this.tbSpecCount);
194
                   this.pageSettings.Controls.Add(this.btnSetGain);
195
                   this.pageSettings.Controls.Add(this.btnGetPreview);
                   this.pageSettings.Controls.Add(this.panel2);
this.pageSettings.Controls.Add(this.panel1);
196
197
198
                   this.pageSettings.Controls.Add(this.tbLog);
199
                   this.pageSettings.Location = new System.Drawing.Point(4, 25);
                  this.pageSettings.Margin = new System.Windows.Forms.Padding(5, 4, 5, 4);
this.pageSettings.Name = "pageSettings";
this.pageSettings.Padding = new System.Windows.Forms.Padding(5, 4, 5, 4);
this.pageSettings.Size = new System.Drawing.Size(1121, 612);
200
201
202
203
                   this.pageSettings.TabIndex = 0;
205
                   this.pageSettings.Text = "Settings";
                   //
// btnSetGain
206
207
208
                   this.btnSetGain.Location = new System.Drawing.Point(239, 8);
209
                   this.btnSetGain.Name = "btnSetGain".Tawing.Tolic (25), this.btnSetGain.Size = new System.Drawing.Size(101, 28);
210
211
212
                   this.btnSetGain.TabIndex = 7;
                   this.btnSetGain.Text = "Set gain";
this.btnSetGain.UseVisualStyleBackColor = true;
213
214
                   this.btnSetGain.Click += new System.EventHandler(this.
215
       btnSetGain_Click);
216
217
                   // btnGetPreview
218
                   this.btnGetPreview.Location = new System.Drawing.Point(239, 60);
219
                   this.btnGetPreview.Name = "btnGetPreview";
220
221
                   this.btnGetPreview.Size = new System.Drawing.Size(101, 28);
                   this.btnGetPreview.TabIndex = 6;
222
223
                   this.btnGetPreview.Text = "Get preview";
224
                   this.btnGetPreview.UseVisualStyleBackColor = true;
225
                   this.btnGetPreview.Click += new System.EventHandler(this.
       btnGetPreview_Click);
226
                  11
                   // btnSendFix
227
228
229
                   this.btnSendFix.Dock = System.Windows.Forms.DockStyle.Top;
230
                   this.btnSendFix.Location = new System.Drawing.Point(0, 56);
                   this.btnSendFix.Margin = new System.Windows.Forms.Padding(5, 4, 5, 4);
this.btnSendFix.Name = "btnSendFix";
this.btnSendFix.Size = new System.Drawing.Size(129, 28);
231
232
233
234
                   this.btnSendFix.TabIndex = 5;
235
                   this.btnSendFix.Text = "Get fix";
236
                   this.btnSendFix.UseVisualStyleBackColor = true;
237
                   this.btnSendFix.Click += new System.EventHandler(this.
       btnSendFix_Click);
238
                   11
                   // btnStopNetService
239
240
241
                   this.btnStopNetService.Dock = System.Windows.Forms.DockStyle.Top;
                   this.btnStopNetService.Location = new System.Drawing.Point(0, 28);
2.42
243
                   this.btnStopNetService.Margin = new System.Windows.Forms.Padding(5, 4, 5
```

```
, 4);
                    this.btnStopNetService.Name = "btnStopNetService";
this.btnStopNetService.Size = new System.Drawing.Size(129, 28);
244
245
                    this.btnStopNetService.TabIndex = 4;
this.btnStopNetService.Text = "Stop service";
246
2.47
                    this.btnStopNetService.UseVisualStyleBackColor = true;
248
249
                    this.btnStopNetService.Click += new System.EventHandler(this.
        btnStopNetService_Click);
250
                    //
                    // btnSendSession
2.51
252
                    this.btnSendSession.Dock = System.Windows.Forms.DockStyle.Top;
253
                    this.btnSendSession.Location = new System.Drawing.Point(0, 28);
this.btnSendSession.Margin = new System.Windows.Forms.Padding(5, 4, 5, 4);
254
255
                    this.btnSendSession.Name = "btnSendSession";
this.btnSendSession.Size = new System.Drawing.Size(132, 28);
this.btnSendSession.TabIndex = 3;
this.btnSendSession.Text = "New session";
this.btnSendSession.UseVisualStyleBackColor = true;
256
2.57
258
259
260
261
                    this.btnSendSession.Click += new System.EventHandler(this.
        btnSendSession_Click);
262
                    //
                     // btnSendClose
2.63
2.64
265
                    this.btnSendClose.Dock = System.Windows.Forms.DockStyle.Top;
                     this.btnSendClose.Location = new System.Drawing.Point(0, 0);
266
                    this.btnSendClose.Margin = new System.Windows.Forms.Padding(5, 4, 5, 4);
this.btnSendClose.Name = "btnSendClose";
this.btnSendClose.Size = new System.Drawing.Size(129, 28);
267
268
269
                     this.btnSendClose.TabIndex = 2;
270
                    this.btnSendClose.Text = "Send close";
271
272
                     this.btnSendClose.UseVisualStyleBackColor = true;
273
                     this.btnSendClose.Click += new System.EventHandler(this.
        btnSendClose_Click);
274
                    //
                    // btnSendHello
275
276
277
                     this.btnSendHello.Dock = System.Windows.Forms.DockStyle.Top;
278
                     this.btnSendHello.Location = new System.Drawing.Point(0, 0);
                    this.btnSendHello.Margin = new System.Windows.Forms.Padding(5, 4, 5, 4);
this.btnSendHello.Name = "btnSendHello";
this.btnSendHello.Size = new System.Drawing.Size(132, 28);
279
280
281
                    this.btnSendHello.TabIndex = 1;
282
                     this.btnSendHello.Text = "Send hello";
283
                     this.btnSendHello.UseVisualStyleBackColor = true;
285
                     this.btnSendHello.Click += new System.EventHandler(this.
       btnSendHello_Click);
286
                    //
// tbLog
287
288
289
                     this.tbLog.Dock = System.Windows.Forms.DockStyle.Bottom;
290
                     this.tbLog.Location = new System.Drawing.Point(5, 112);
291
                     this.tbLog.Margin = new System.Windows.Forms.Padding(5, 4, 5, 4);
                    this.tbLog.Multiline = true;
this.tbLog.Name = "tbLog";
292
293
                    this.tbLog.ScrollBars = System.Windows.Forms.ScrollBars.Both;
this.tbLog.Size = new System.Drawing.Size(1111, 496);
294
295
296
                     this.tbLog.TabIndex = 0;
297
298
                     // pageSpectrometry
299
300
                    this.pageSpectrometry.BackColor = System.Drawing.SystemColors.ButtonFace;
                    this.pageSpectrometry.Location = new System.Drawing.Point(4, 25);
this.pageSpectrometry.Margin = new System.Windows.Forms.Padding(5, 4, 5,
301
302
        4);
303
                     this.pageSpectrometry.Name = "pageSpectrometry";
304
                    this.pageSpectrometry.Padding = new System.Windows.Forms.Padding(5, 4, 5,
         4);
                     this.pageSpectrometry.Size = new System.Drawing.Size(1121, 612);
305
                     this.pageSpectrometry.TabIndex = 1;
306
307
                     this.pageSpectrometry.Text = "Spectrometry";
308
309
                     // tbSpecCount
310
                    this.tbSpecCount.Location = new System.Drawing.Point(358, 63);
this.tbSpecCount.Name = "tbSpecCount";
311
312
                     this.tbSpecCount.Size = new System.Drawing.Size(100, 23);
313
314
                     this.tbSpecCount.TabIndex = 8;
315
                     // tbSpecLivetime
316
317
318
                     this.tbSpecLivetime.Location = new System.Drawing.Point(464, 63);
                    this.tbSpecLivetime.Name = "tbSpecLivetime";
this.tbSpecLivetime.Size = new System.Drawing.Size(100, 23);
319
320
321
                     this.tbSpecLivetime.TabIndex = 9;
322
                     // panel1
323
```

```
324
                  this.panel1.Controls.Add(this.btnSendFix);
325
326
                  this.panel1.Controls.Add(this.btnStopNetService);
327
                  \verb|this.panel1.Controls.Add(this.btnSendClose)|;
                  this.panel1.Dock = System.Windows.Forms.DockStyle.Right;
this.panel1.Location = new System.Drawing.Point(987, 4);
this.panel1.Name = "panel1";
328
329
330
331
                  this.panel1.Size = new System.Drawing.Size(129, 108);
332
                  this.panel1.TabIndex = 10;
333
334
                  // panel2
335
                  this.panel2.Controls.Add(this.btnSendSession);
336
337
                  this.panel2.Controls.Add(this.btnSendHello);
338
                  this.panel2.Dock = System.Windows.Forms.DockStyle.Left;
                  this.panel2.Location = new System.Drawing.Point(5, 4);
this.panel2.Name = "panel2";
this.panel2.Size = new System.Drawing.Size(132, 108);
339
340
341
342
                  this.panel2.TabIndex = 11;
343
344
                  // tbVoltage
345
                  this.tbVoltage.Location = new System.Drawing.Point(358, 8);
this.tbVoltage.Name = "tbVoltage";
this.tbVoltage.Size = new System.Drawing.Size(100, 23);
346
347
348
349
                  this.tbVoltage.TabIndex = 12;
350
351
                   // tbCoarseGain
352
353
                  this.tbCoarseGain.Location = new System.Drawing.Point(465, 8);
                  this.tbCoarseGain.Name = "tbCoarseGain";
354
355
                  this.tbCoarseGain.Size = new System.Drawing.Size(100, 23);
356
                  this.tbCoarseGain.TabIndex = 13;
357
358
                   // tbFineGain
359
                  this.tbFineGain.Location = new System.Drawing.Point(571, 8); this.tbFineGain.Name = "tbFineGain";
360
361
362
                  this.tbFineGain.Size = new System.Drawing.Size(100, 23);
                  this.tbFineGain.TabIndex = 14;
363
364
                  // FormMain
365
366
                  this.AutoScaleDimensions = new System.Drawing.SizeF(8F, 16F);
367
                  this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;
368
369
                  this.ClientSize = new System.Drawing.Size(1129, 712);
370
                  this.Controls.Add(this.tabs);
371
                  this.Controls.Add(this.tools);
                  this.Controls.Add(this.status);
372
373
                  this.Controls.Add(this.menu);
374
                  this.Font = new System.Drawing.Font("Microsoft Sans Serif", 10F,
       System.Drawing.FontStyle.Regular, System.Drawing.GraphicsUnit.Point, ((byte)(0)));
375
                  this.MainMenuStrip = this.menu;
                  this.Margin = new System.Windows.Forms.Padding(5, 4, 5, 4); this.Name = "FormMain";
376
377
378
                  \verb|this.StartPosition| = System.Windows.Forms.FormStartPosition.CenterScreen|; \\
379
                  this.Text = "Crash";
380
                  this.FormClosing += new System.Windows.Forms.FormClosingEventHandler(this.
       FormMain_FormClosing);
381
                  this.Load += new System.EventHandler(this.FormMain_Load);
                  \verb|this.menu.ResumeLayout(false)|;
382
383
                  this.menu.PerformLayout();
384
                  this.status.ResumeLayout(false);
                  this.status.PerformLayout();
385
386
                  this.tools.ResumeLayout (false);
387
                  this.tools.PerformLayout();
388
                  this.tabs.ResumeLayout(false);
389
                  this.pageSettings.ResumeLayout(false);
                  this.pageSettings.PerformLayout();
390
391
                  this.panel1.ResumeLayout(false);
392
                  this.panel2.ResumeLayout(false);
393
                  this.ResumeLayout(false);
394
                  this.PerformLayout();
395
396
             }
```

### **7.2.3.13 void crash.FormMain.log ( string message )** [private]

Definition at line 156 of file FormMain.cs.

References crash.FormMain.tbLog.

7.2.3.14 void crash.FormMain.menuItemConnect\_Click ( object sender, EventArgs e ) [private]

Definition at line 167 of file FormMain.cs.

References crash.FormConnect.IP, crash.FormConnect.Port, and crash.FormMain.sendq.

7.2.3.15 void crash.FormMain.menultemDisconnect\_Click (object sender, EventArgs e) [private]

Definition at line 178 of file FormMain.cs.

References crash.FormMain.sendq.

7.2.3.16 void crash.FormMain.menuItemExit\_Click ( object sender, EventArgs e ) [private]

Definition at line 161 of file FormMain.cs.

References crash.FormMain.menuItemDisconnect\_Click().

7.2.3.17 void crash.FormMain.timer\_Tick( object sender, EventArgs e ) [private]

Definition at line 62 of file FormMain.cs.

References crash.FormMain.dispatchRecvMsg(), and crash.FormMain.recvq.

7.2.4 Member Data Documentation

**7.2.4.1 System.Windows.Forms.ToolStripButton crash.FormMain.btnConnect** [private]

Definition at line 405 of file FormMain.Designer.cs.

7.2.4.2 System.Windows.Forms.ToolStripButton crash.FormMain.btnDisconnect [private]

Definition at line 409 of file FormMain.Designer.cs.

**7.2.4.3 System.Windows.Forms.Button crash.FormMain.btnGetPreview** [private]

Definition at line 421 of file FormMain.Designer.cs.

**7.2.4.4 System.Windows.Forms.Button crash.FormMain.btnSendClose** [private]

Definition at line 415 of file FormMain.Designer.cs.

**7.2.4.5 System.Windows.Forms.Button crash.FormMain.btnSendFix** [private]

Definition at line 420 of file FormMain.Designer.cs.

**7.2.4.6 System.Windows.Forms.Button crash.FormMain.btnSendHello** [private]

Definition at line 416 of file FormMain.Designer.cs.

**7.2.4.7 System.Windows.Forms.Button crash.FormMain.btnSendSession** [private]

Definition at line 418 of file FormMain.Designer.cs.

**7.2.4.8 System.Windows.Forms.Button crash.FormMain.btnSetGain** [private]

Definition at line 422 of file FormMain.Designer.cs.

**7.2.4.9 System.Windows.Forms.Button crash.FormMain.btnStopNetService** [private]

Definition at line 419 of file FormMain.Designer.cs.

**7.2.4.10** System.ComponentModel.IContainer crash.FormMain.components = null [private]

Required designer variable.

Definition at line 8 of file FormMain.Designer.cs.

**7.2.4.11** FormConnect crash.FormMain.formConnect = new FormConnect() [private]

Definition at line 41 of file FormMain.cs.

7.2.4.12 System.Windows.Forms.ToolStripLabel crash.FormMain.lblConnectionStatus [private] Definition at line 411 of file FormMain.Designer.cs. **7.2.4.13** System.Windows.Forms.MenuStrip crash.FormMain.menu [private] Definition at line 400 of file FormMain.Designer.cs. **7.2.4.14** System.Windows.Forms.ToolStripMenuItem crash.FormMain.menuItemConnect [private] Definition at line 406 of file FormMain.Designer.cs. 7.2.4.15 System.Windows.Forms.ToolStripMenuItem crash.FormMain.menuItemDisconnect [private] Definition at line 407 of file FormMain.Designer.cs. **7.2.4.16** System.Windows.Forms.ToolStripMenuItem crash.FormMain.menuItemExit [private] Definition at line 404 of file FormMain.Designer.cs. **7.2.4.17** System.Windows.Forms.ToolStripMenuItem crash.FormMain.menuItemFile [private] Definition at line 403 of file FormMain.Designer.cs. 7.2.4.18 NetService crash.FormMain.netService = new NetService(sendq, recvq) [static], [private] Definition at line 38 of file FormMain.cs. 7.2.4.19 Thread crash.FormMain.netThread = new Thread(netService.DoWork) [static], [private] Definition at line 39 of file FormMain.cs. **7.2.4.20** System.Windows.Forms.TabPage crash.FormMain.pageSettings [private] Definition at line 413 of file FormMain.Designer.cs. **7.2.4.21 System.Windows.Forms.TabPage crash.FormMain.pageSpectrometry** [private] Definition at line 414 of file FormMain.Designer.cs. **7.2.4.22 System.Windows.Forms.Panel crash.FormMain.panel1** [private] Definition at line 429 of file FormMain.Designer.cs. **7.2.4.23 System.Windows.Forms.Panel crash.FormMain.panel2** [private] Definition at line 428 of file FormMain.Designer.cs.

7.2.4.24 ConcurrentQueue<Proto.Message> crash.FormMain.recvq = new ConcurrentQueue<Proto.Message>() [static], [private]

Definition at line 36 of file FormMain.cs.

7.2.4.25 ConcurrentQueue<Proto.Message> crash.FormMain.sendq = new ConcurrentQueue<Proto.Message>()
 [static], [private]

Definition at line 35 of file FormMain.cs.

**7.2.4.26** System.Windows.Forms.StatusStrip crash.FormMain.status [private]

Definition at line 401 of file FormMain.Designer.cs.

7.2.4.27 System.Windows.Forms.ToolStripStatusLabel crash.FormMain.statusLabel [private]

Definition at line 410 of file FormMain.Designer.cs.

**7.2.4.28 System.Windows.Forms.TabControl crash.FormMain.tabs** [private]

Definition at line 412 of file FormMain.Designer.cs.

**7.2.4.29** System.Windows.Forms.TextBox crash.FormMain.tbCoarseGain [private]

Definition at line 424 of file FormMain.Designer.cs.

**7.2.4.30** System.Windows.Forms.TextBox crash.FormMain.tbFineGain [private]

Definition at line 423 of file FormMain.Designer.cs.

**7.2.4.31 System.Windows.Forms.TextBox crash.FormMain.tbLog** [private]

Definition at line 417 of file FormMain.Designer.cs.

**7.2.4.32** System.Windows.Forms.TextBox crash.FormMain.tbSpecCount [private]

Definition at line 427 of file FormMain.Designer.cs.

**7.2.4.33** System.Windows.Forms.TextBox crash.FormMain.tbSpecLivetime [private]

Definition at line 426 of file FormMain.Designer.cs.

**7.2.4.34 System.Windows.Forms.TextBox crash.FormMain.tbVoltage** [private]

Definition at line 425 of file FormMain.Designer.cs.

7.2.4.35 System.Windows.Forms.Timer crash.FormMain.timer = new System.Windows.Forms.Timer() [private]

Definition at line 42 of file FormMain.cs.

**7.2.4.36** System.Windows.Forms.ToolStrip crash.FormMain.tools [private]

Definition at line 402 of file FormMain.Designer.cs.

7.2.4.37 System.Windows.Forms.ToolStripSeparator crash.FormMain.toolStripSeparator1 [private]

Definition at line 408 of file FormMain.Designer.cs.

The documentation for this class was generated from the following files:

- /home/drb/dev/cs/crash/FormMain.cs
- /home/drb/dev/cs/crash/FormMain.Designer.cs

# 7.3 crash.Proto.Message Class Reference

**Public Member Functions** 

- Message (string cmd)
- Message (string cmd, Dictionary< string, string > args)
- void AddParameter (string key, object value)

#### **Public Attributes**

string command

Protocol command.

Dictionary< string, string > arguments = new Dictionary<string, string>()
 Protocol arguments stored as a dictionary.

# 7.3.1 Detailed Description

Message - Class used for serialization/deserialization of protocol messages

Definition at line 31 of file Proto.cs.

- 7.3.2 Constructor & Destructor Documentation
- 7.3.2.1 crash.Proto.Message.Message ( string cmd )

Default constructor for the Message class

### **Parameters**

| cmd | - protocol command |
|-----|--------------------|

Definition at line 43 of file Proto.cs.

```
44 {
45 command = cmd;
46 }
```

7.3.2.2 crash.Proto.Message.Message ( string  $\mathit{cmd}$ , Dictionary< string, string >  $\mathit{args}$  )

Parameterized constructor for the Message class

#### **Parameters**

| cmd  | - protocol command   |
|------|----------------------|
| args | - protocol arguments |

Definition at line 54 of file Proto.cs.

### 7.3.3 Member Function Documentation

7.3.3.1 void crash.Proto.Message.AddParameter ( string key, object value )

Function used to add a parameter to the message

# **Parameters**

| key   | - argument key   |  |
|-------|------------------|--|
| value | - argument value |  |

Definition at line 66 of file Proto.cs.

# 7.3.4 Member Data Documentation

7.3.4.1 Dictionary < string > crash.Proto.Message.arguments = new Dictionary < string, string > ()

Protocol arguments stored as a dictionary.

Definition at line 37 of file Proto.cs.

7.3.4.2 string crash.Proto.Message.command

Protocol command.

Definition at line 34 of file Proto.cs.

The documentation for this class was generated from the following file:

• /home/drb/dev/cs/crash/Proto.cs

### 7.4 crash.NetService Class Reference

#### **Public Member Functions**

- NetService (ConcurrentQueue< Proto.Message > sendQueue, ConcurrentQueue< Proto.Message > recvQueue)
- void DoWork ()
- void RequestStop ()
- bool IsRunning ()

#### **Private Member Functions**

- void dispatchSendMsg (Proto.Message msg)
- void dispatchRecvMsg (Proto.Message msg)
- bool sendMessage (NetworkStream stream, Proto.Message msg)
- bool recvData (NetworkStream stream)
- bool recvMessage (out Proto.Message msg)
- byte[] hostToBig\_i32 (int value)
- int bigToHost\_i32 (byte[] bvalue)

#### **Private Attributes**

· volatile bool running

Running state for this service.

• TcpClient Client = null

Network utilities.

- NetworkStream ClientStream = null
- ConcurrentQueue < Proto.Message > sendq = null

Queue used to transfer packets to server (Burn)

ConcurrentQueue < Proto.Message > recvq = null

Queue used to transfer packets back to GUI client (Crash)

List< byte > recvBuffer = new List<byte>()

Buffer to hold data streams from the network.

### 7.4.1 Detailed Description

NetService - Threaded class for network communication

NetService - Continuation of the Threaded NetService class containing IO utilities

Definition at line 31 of file NetService.cs.

#### 7.4.2 Constructor & Destructor Documentation

7.4.2.1 crash.NetService.NetService ( ConcurrentQueue < Proto.Message > sendQueue, ConcurrentQueue < Proto.Message > recvQueue )

Constructor for the NetService

### **Parameters**

| sendQueue | - Queue used to receive messages from the GUI client. |
|-----------|---|
| recvQueue | - Queue used to pass messages on to the server.       |

Definition at line 54 of file NetService.cs.

References crash.NetService.recvq, and crash.NetService.sendq.

#### 7.4.3 Member Function Documentation

### 7.4.3.1 int crash.NetService.bigToHost\_i32 ( byte[] bvalue ) [private]

Function used to convert big endian ints to hosts endianness

#### **Parameters**

```
value - The bytes to convert
```

#### Returns

- Converted int

Definition at line 152 of file NetService\_IO.cs.

# 7.4.3.2 void crash.NetService.dispatchRecvMsg ( Proto.Message msg ) [private]

Function used to handle messages coming from the server

#### **Parameters**

```
msg - The message to handle
```

Definition at line 170 of file NetService.cs.

References crash.NetService.recvq.

```
171 {
```

```
switch (msg.command)
173
                     case "close_ok": // The server has received a close message and are closing down
174
175
                         if (ClientStream != null)
                             ClientStream.Close();
176
177
                         ClientStream = null;
178
179
                         if(Client != null && Client.Connected)
180
                             Client.Close();
181
                         Client = null;
182
                         recvq.Enqueue(msg); // Pass message back to GUI client
183
184
                         break;
185
186
                    default:
                         recvq.Enqueue(msg); // Pass message back to GUI client
187
188
                         break:
189
                }
190
```

### 7.4.3.3 void crash.NetService.dispatchSendMsg ( Proto.Message msg ) [private]

Function used to handle messages coming from the GUI client

#### **Parameters**

```
msg - The message to handle
```

Definition at line 91 of file NetService.cs.

References crash.NetService.recvq, and crash.NetService.sendMessage().

```
92
93
               switch (msg.command)
94
                   case "connect":
95
                       // Try to connect to server
97
                       Client = new TcpClient();
98
                        string host = msg.arguments["host"];
99
                       int port = Convert.ToInt32(msg.arguments["port"]);
100
101
102
103
                             Client.Connect(host, port);
104
105
                         catch(Exception ex)
106
                             msg.command = "connect_failed";
107
108
                             msg.arguments.Add("message", ex.Message);
109
                             recvq.Enqueue(msg);
                             return;
110
111
                         }
112
                         if (Client.Connected)
113
114
115
                             // Store the stream from the TCP client
116
                             ClientStream = Client.GetStream();
117
                             // Empty the network buffer
118
                             recvBuffer.Clear();
                             // Update the message to a connection response message and send it back to {\tt GUI}
119
       client
120
                             msg.command = "connect_ok";
121
                             recvq.Enqueue(msg);
122
123
                         else
124
                             msg.command = "connect_failed";
125
                             msg.arguments.Add("message", "Connection failed");
126
127
                             recvq.Enqueue(msg);
128
129
                         break;
130
131
                    case "disconnect":
132
                        // Disconnect from server and send response back to GUI client
133
                         if (ClientStream != null)
```

```
134
                              ClientStream.Close();
135
                         ClientStream = null;
136
                         if(Client != null && Client.Connected)
    Client.Close();
137
138
                         Client = null;
139
140
141
                         msg.command = "disconnect_ok";
142
                         recvq.Enqueue(msg);
143
                         break;
144
145
                     default:
                         if (ClientStream == null)
146
147
148
                              Proto.Message responseMsg = new Proto.Message("error");
149
                              responseMsg.AddParameter("message", "Can not send message, not connected to peer");
150
                              recvq. Enqueue (responseMsg);
151
                              return;
152
153
154
                         // Send message to server
155
                         if(!sendMessage(ClientStream, msg))
156
                              Proto.Message responseMsg = new Proto.Message("error");
157
                              responseMsg.AddParameter("message", "Unable to send message");
158
159
                              recvq.Enqueue(responseMsg);
160
161
162
                         break:
163
                 }
```

#### 7.4.3.4 void crash.NetService.DoWork ( )

Thread entry point

Definition at line 64 of file NetService.cs.

References crash.NetService.dispatchRecvMsg(), crash.NetService.dispatchSendMsg(), crash.NetService.recv $\leftarrow$  Data(), crash.NetService.recvMessage(), and crash.NetService.sendq.

```
6.5
66
               while (running)
68
                   Proto.Message sendMsg, recvMsg;
69
70
                   \ensuremath{//} Read all messages from GUI client
71
                   while(sendq.Count > 0)
                       if (sendq.TryDequeue(out sendMsg))
72
                            dispatchSendMsg(sendMsg); // Handle the messages
73
75
                    // If we have a connection, read and buffer any waiting data streams
76
                    if (ClientStream != null)
77
                        while (recvData(ClientStream)) ;
78
79
                    // Extract messages from the network buffer
                   while (recvMessage(out recvMsg))
80
                        dispatchRecvMsg(recvMsg); // Handle the messages
82
                   Thread.Sleep(5); // Play nice (FIXME)
83
84
           }
85
```

# 7.4.3.5 byte[]crash.NetService.hostToBig\_i32(int value) [private]

Function used to convert ints to big endian

#### **Parameters**

*value* - The int to convert

#### Returns

- Converted bytes

Definition at line 139 of file NetService\_IO.cs.

# 7.4.3.6 bool crash.NetService.IsRunning ( )

Function used to check the running state of this service

Definition at line 203 of file NetService.cs.

References crash.NetService.running.

# 7.4.3.7 bool crash.NetService.recvData ( NetworkStream stream ) [private]

Function to receive a data streams from the server and store them in the network buffer

# **Parameters**

```
stream - The stream to read from
```

## Returns

- Retun true on success, false on failure

Definition at line 76 of file NetService\_IO.cs.

References crash.NetService.recvBuffer.

```
78
                 if (!stream.DataAvailable)
79
                     return false;
80
                 byte[] buffer = new byte[1024];
81
82
                 while (true)
                     if (!stream.DataAvailable)
85
86
                     int len = stream.Read(buffer, 0, buffer.Length);
if (len <= 0)</pre>
87
88
89
                          break;
91
                     for (int i = 0; i<len; i++)</pre>
92
                          recvBuffer.Add(buffer[i]);
93
94
                 return true;
```

#### 7.4.3.8 bool crash.NetService.recvMessage ( out Proto.Message msg ) [private]

Function to read messages out of the network buffer

#### **Parameters**

```
msg - Storeage for any message read from the network buffer
```

### Returns

- Return true on success, false on failure

Definition at line 103 of file NetService\_IO.cs.

References crash.NetService.bigToHost\_i32(), and crash.NetService.recvBuffer.

```
104
105
                 msg = null;
106
                 // Make sure buffer hold at least a 32 bit int (netstrings)
107
108
                 if (recvBuffer.Count < 4)</pre>
109
                     return false;
110
111
                 // Read the message size out of the buffer
112
                byte[] byteSize = new byte[4];
                recvBuffer.CopyTo(0, byteSize, 0, 4);
113
114
115
                 // Convert the size to the hosts endianness
                int siz = bigToHost_i32(byteSize);
116
117
118
                 // Make sure the message stored in the buffer are complete
119
                 if (recvBuffer.Count < 4 + siz)
120
                     return false:
121
122
                 // Read out the message and update the buffer
123
                byte[] bjson = new byte[siz];
                recvBuffer.CopyTo(4, bjson, 0, siz);
recvBuffer.RemoveRange(0, 4 + siz);
124
125
126
127
                // Deserialize the message
                 string json = Encoding.UTF8.GetString(bjson);
129
                msg = JsonConvert.DeserializeObject<Proto.Message>(json);
130
131
                 return true;
            }
132
```

### 7.4.3.9 void crash.NetService.RequestStop ( )

Function used to stop this service

Definition at line 195 of file NetService.cs.

### 7.4.3.10 bool crash.NetService.sendMessage ( NetworkStream stream, Proto.Message msg ) [private]

Function to send a message to the server

#### **Parameters**

| strean | - The stream to write to |  |  |
|--------|--------------------------|--|--|
| msg    | - The message to send    |  |  |

#### Returns

- Retun true on success, false on failure

Definition at line 39 of file NetService\_IO.cs.

References crash.NetService.hostToBig\_i32(), and crash.NetService.recvq.

```
40
41
                 string json = JsonConvert.SerializeObject(msg);
42
43
                 using (MemoryStream mstream = new MemoryStream())
44
45
                      using (BinaryWriter writer = new BinaryWriter(mstream))
46
                           byte[] encodedJson = Encoding.UTF8.GetBytes(json);
48
                           writer.Write(hostToBig_i32(encodedJson.Length));
49
                           writer.Write(encodedJson);
50
51
52
                      byte[] request = mstream.ToArray();
53
55
                           stream.Write(request, 0, request.Length);
56
                           stream.Flush();
57
                      catch(SocketException ex)
58
59
                           Proto.Message emsg = new Proto.Message("error_socket");
emsg.AddParameter("error_code", ex.ErrorCode);
emsg.AddParameter("message", ex.Message);
60
62
63
                           recvq.Enqueue(emsg);
64
                           return false;
65
66
68
                 return true;
```

#### 7.4.4 Member Data Documentation

**7.4.4.1 TcpClient crash.NetService.Client = null** [private]

Network utilities.

Definition at line 37 of file NetService.cs.

 $\textbf{7.4.4.2} \quad \textbf{NetworkStream crash.NetService.ClientStream = null} \quad \texttt{[private]}$ 

Definition at line 38 of file NetService.cs.

7.4.4.3 List<byte> crash.NetService.recvBuffer = new List<byte>() [private]

Buffer to hold data streams from the network.

Definition at line 47 of file NetService.cs.

```
7.4.4.4 ConcurrentQueue<Proto.Message> crash.NetService.recvq = null [private]
```

Queue used to transfer packets back to GUI client (Crash)

Definition at line 44 of file NetService.cs.

**7.4.4.5 volatile bool crash.NetService.running** [private]

Running state for this service.

Definition at line 34 of file NetService.cs.

```
7.4.4.6 ConcurrentQueue<Proto.Message> crash.NetService.sendq = null [private]
```

Queue used to transfer packets to server (Burn)

Definition at line 41 of file NetService.cs.

The documentation for this class was generated from the following files:

- /home/drb/dev/cs/crash/NetService.cs
- /home/drb/dev/cs/crash/NetService IO.cs

# 7.5 crash.Program Class Reference

**Static Private Member Functions** 

static void Main ()
 The main entry point for the application.

### 7.5.1 Detailed Description

Definition at line 9 of file Program.cs.

# 7.5.2 Member Function Documentation

```
7.5.2.1 static void crash.Program.Main() [static], [private]
```

The main entry point for the application.

Definition at line 15 of file Program.cs.

The documentation for this class was generated from the following file:

• /home/drb/dev/cs/crash/Program.cs

S

| 34  | CONTENT |
|---|---------|
| 8 File Documentation  |         |
| 8.1 /home/drb/dev/cs/crash/FormConnect.cs File Reference          |         |
| Classes   |         |
| class crash.FormConnect   |         |
| Namespaces  |         |
| namespace crash   |         |
| 8.2 /home/drb/dev/cs/crash/FormConnect.Designer.cs File Reference |         |
| Classes   |         |
| class crash.FormConnect   |         |
| Namespaces  |         |
| namespace crash   |         |
| 8.3 /home/drb/dev/cs/crash/FormMain.cs File Reference             |         |
| Classes   |         |
| class crash.FormMain  |         |
| Namespaces  |         |
| namespace crash   |         |
| 8.4 /home/drb/dev/cs/crash/FormMain.Designer.cs File Reference    |         |
| Classes   |         |
| class crash.FormMain  |         |
| Namespaces  |         |

namespace crash

| 8.5 | /home/d | rb/dev/ | cs/cras | h/NetSer | vice.cs | File F | Reference |
|-----|---------|---------|---------|----------|---------|--------|-----------|
|-----|---------|---------|---------|----------|---------|--------|-----------|

#### Classes

· class crash.NetService

# Namespaces

- namespace crash
- 8.6 /home/drb/dev/cs/crash/NetService\_IO.cs File Reference

### Classes

· class crash.NetService

# Namespaces

- · namespace crash
- 8.7 /home/drb/dev/cs/crash/Program.cs File Reference

# Classes

· class crash.Program

# Namespaces

- · namespace crash
- 8.8 /home/drb/dev/cs/crash/Proto.cs File Reference

## Classes

· class crash.Proto.Message

# **Namespaces**

- · namespace crash
- · namespace crash.Proto
- 8.9 /home/drb/dev/cs/crash/README.md File Reference

# Index

| /home/drb/dev/cs/crash/FormConnect.Designer.cs, 34 | crash::FormMain, 12         |
|--|-----------------------------|
| /home/drb/dev/cs/crash/FormConnect.cs, 34          |                             |
| /home/drb/dev/cs/crash/FormMain.Designer.cs, 34    | Client                      |
| /home/drb/dev/cs/crash/FormMain.cs, 34             | crash::NetService, 32       |
| /home/drb/dev/cs/crash/NetService.cs, 35           | ClientStream                |
| /home/drb/dev/cs/crash/NetService_IO.cs, 35        | crash::NetService, 32       |
| /home/drb/dev/cs/crash/Program.cs, 35              | command                     |
| /home/drb/dev/cs/crash/Proto.cs, 35                | crash::Proto::Message, 25   |
| /home/drb/dev/cs/crash/README.md, 35               | components                  |
| A ddDayaraatay                                     | crash::FormConnect, 7       |
| AddParameter                                       | crash::FormMain, 21         |
| crash::Proto::Message, 25                          | crash, 2                    |
| arguments  | crash.FormConnect, 3        |
| crash::Proto::Message, 25                          | crash.FormMain, 9           |
| bigToHost_i32                                      | crash.NetService, 26        |
| crash::NetService, 27                              | crash.Program, 33           |
| btnCancel  | crash.Proto, 3              |
| crash::FormConnect, 7                              | crash.Proto.Message, 24     |
| btnCancel Click                                    | crash::FormConnect          |
| crash::FormConnect, 4                              | btnCancel, 7                |
| btnConnect   | btnCancel_Click, 4          |
| crash::FormMain, 21                                | btnOk, 7                    |
| btnDisconnect                                      | btnOk_Click, 4              |
|  | components, 7               |
| crash::FormMain, 21<br>btnGetPreview               | Dispose, 5                  |
|  | FormConnect, 4              |
| crash::FormMain, 21                                | InitializeComponent, 5      |
| btnGetPreview_Click                                | IP, 8                       |
| crash::FormMain, 11                                | label1, 8                   |
| btnOk  | label2, 8                   |
| crash::FormConnect, 7                              | panel1, 8                   |
| btnOk_Click  | panel2, 8                   |
| crash::FormConnect, 4                              | panel3, 8                   |
| btnSendClose                                       | panel4, 8                   |
| crash::FormMain, 21                                | Port, 8                     |
| btnSendClose_Click                                 | tbIP, 8                     |
| crash::FormMain, 11                                | tbPort, 8                   |
| btnSendFix   | crash::FormMain             |
| crash::FormMain, 21                                | btnConnect, 21              |
| btnSendFix_Click                                   | btnDisconnect, 21           |
| crash::FormMain, 11                                | btnGetPreview, 21           |
| btnSendHello                                       | btnGetPreview Click, 11     |
| crash::FormMain, 21                                | btnSendClose, 21            |
| btnSendHello_Click                                 | btnSendClose_Click, 11      |
| crash::FormMain, 11                                | btnSendFix, 21              |
| btnSendSession                                     | btnSendFix Click, 11        |
| crash::FormMain, 21                                | <del>-</del> :              |
| btnSendSession_Click                               | btnSendHello, 21            |
| crash::FormMain, 11                                | btnSendHello_Click, 11      |
| btnSetGain   | btnSendSession, 21          |
| crash::FormMain, 21                                | btnSendSession_Click, 11    |
| btnSetGain_Click                                   | btnSetGain, 21              |
| crash::FormMain, 12                                | btnSetGain_Click, 12        |
| btnStopNetService                                  | btnStopNetService, 21       |
| crash::FormMain, 21                                | btnStopNetService_Click, 12 |
| btnStopNetService_Click                            | components, 21              |

38 INDEX

| dispatchRecvMsg, 12          | crash::Proto::Message    |
|------------------------------|--------------------------|
| Dispose, 14                  | AddParameter, 25         |
| formConnect, 21              | arguments, 25            |
| FormMain, 10                 | command, 25              |
| FormMain_FormClosing, 14     | Message, 24, 25          |
| FormMain_Load, 14            |                          |
| InitializeComponent, 14      | dispatchRecvMsg          |
| IblConnectionStatus, 21      | crash::FormMain, 12      |
| log, 19                      | crash::NetService, 27    |
| menu, 22                     | dispatchSendMsg          |
| menuItemConnect, 22          | crash::NetService, 28    |
| menuItemConnect_Click, 20    | Dispose                  |
| menultemDisconnect, 22       | crash::FormConnect, 5    |
| menuItemDisconnect_Click, 20 | crash::FormMain, 14      |
| menultemExit, 22             | DoWork                   |
| menuItemExit_Click, 20       | crash::NetService, 29    |
| menultemFile, 22             | FormConnect              |
| netService, 22               | crash::FormConnect, 4    |
| netThread, 22                | formConnect              |
| pageSettings, 22             | crash::FormMain, 21      |
| pageSpectrometry, 22         | FormMain                 |
| panel1, 22                   | crash::FormMain, 10      |
| panel2, 22                   | FormMain_FormClosing     |
| recvq, 22                    | crash::FormMain, 14      |
| sendq, 23                    | FormMain Load            |
| status, 23                   | crash::FormMain, 14      |
| statusLabel, 23              | Crasiii Oriniviani, 14   |
| tabs, 23                     | hostToBig_i32            |
| tbCoarseGain, 23             | crash::NetService, 29    |
| tbFineGain, 23               | ,                        |
| tbLog, 23                    | InitializeComponent      |
| tbSpecCount, 23              | crash::FormConnect, 5    |
| tbSpecLivetime, 23           | crash::FormMain, 14      |
| tbVoltage, 23                | IP                       |
| timer, 23                    | crash::FormConnect, 8    |
| timer_Tick, 20               | IsRunning                |
| toolStripSeparator1, 24      | crash::NetService, 30    |
| tools, 23                    |                          |
| crash::NetService            | label1                   |
| bigToHost_i32, 27            | crash::FormConnect, 8    |
| Client, 32                   | label2                   |
| ClientStream, 32             | crash::FormConnect, 8    |
| dispatchRecvMsg, 27          | IblConnectionStatus      |
| dispatchSendMsg, 28          | crash::FormMain, 21      |
| DoWork, 29                   | log                      |
| hostToBig_i32, 29            | crash::FormMain, 19      |
| IsRunning, 30                | Main                     |
| NetService, 26               | crash::Program, 33       |
| recvBuffer, 32               | menu                     |
| recvData, 30                 | crash::FormMain, 22      |
| recvMessage, 30              | menultemConnect          |
| recvq, 32                    | crash::FormMain, 22      |
| RequestStop, 31              | menultemConnect_Click    |
| running, 33                  | crash::FormMain, 20      |
| sendMessage, 31              | menultemDisconnect       |
| sendq, 33                    | crash::FormMain, 22      |
| crash::Program               | menultemDisconnect Click |
| Main, 33                     | crash::FormMain, 20      |
| man, oo                      | orasii oriiiwaiii, 20    |

INDEX 39

| menuItemExit                  | tbCoarseGain          |
|-------------------------------|-----------------------|
| crash::FormMain, 22           | crash::FormMain, 23   |
| menultemExit Click            | tbFineGain            |
| crash::FormMain, 20           | crash::FormMain, 23   |
| menultemFile                  | thIP                  |
|                               |                       |
| crash::FormMain, 22           | crash::FormConnect, 8 |
| Message                       | tbLog                 |
| crash::Proto::Message, 24, 25 | crash::FormMain, 23   |
|                               | tbPort                |
| NetService                    | crash::FormConnect, 8 |
| crash::NetService, 26         | tbSpecCount           |
| netService                    | crash::FormMain, 23   |
| crash::FormMain, 22           | tbSpecLivetime        |
| netThread                     | crash::FormMain, 23   |
| crash::FormMain, 22           |                       |
| Crasiii Oiiiiwaiii, 22        | tbVoltage             |
|                               | crash::FormMain, 23   |
| pageSettings                  | timer                 |
| crash::FormMain, 22           | crash::FormMain, 23   |
| pageSpectrometry              | timer_Tick            |
| crash::FormMain, 22           | crash::FormMain, 20   |
| panel1                        | toolStripSeparator1   |
| crash::FormConnect, 8         | crash::FormMain, 24   |
| crash::FormMain, 22           | tools                 |
| panel2                        |                       |
| •                             | crash::FormMain, 23   |
| crash::FormConnect, 8         |                       |
| crash::FormMain, 22           |                       |
| panel3                        |                       |
| crash::FormConnect, 8         |                       |
| panel4                        |                       |
| crash::FormConnect, 8         |                       |
| Port                          |                       |
| crash::FormConnect, 8         |                       |
|                               |                       |
| recvBuffer                    |                       |
|                               |                       |
| crash::NetService, 32         |                       |
| recvData                      |                       |
| crash::NetService, 30         |                       |
| recvMessage                   |                       |
| crash::NetService, 30         |                       |
| recvq                         |                       |
| crash::FormMain, 22           |                       |
| crash::NetService, 32         |                       |
| RequestStop                   |                       |
| crash::NetService, 31         |                       |
|                               |                       |
| running                       |                       |
| crash::NetService, 33         |                       |
|                               |                       |
| sendMessage                   |                       |
| crash::NetService, 31         |                       |
| sendq                         |                       |
| crash::FormMain, 23           |                       |
| crash::NetService, 33         |                       |
| status                        |                       |
| crash::FormMain, 23           |                       |
| statusLabel                   |                       |
|                               |                       |
| crash::FormMain, 23           |                       |
|                               |                       |
| tabs                          |                       |
| crash::FormMain, 23           |                       |
|                               |                       |