

# Gnutella p2p system

## 1.0

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# Chapter 1

## Data Structure Documentation

### 1.1 allocated Struct Reference

```
#include <Tracker.h>
```

#### Data Fields

- int **client\_id**
- char **ip\_addr** [20]
- unsigned int **port**
- struct **allocated** \* **next**

#### 1.1.1 Detailed Description

Definition at line 30 of file Tracker.h.

#### 1.1.2 Field Documentation

##### 1.1.2.1 int client\_id

Definition at line 31 of file Tracker.h.

##### 1.1.2.2 char ip\_addr[20]

Definition at line 32 of file Tracker.h.

##### 1.1.2.3 struct allocated\* next

Definition at line 34 of file Tracker.h.

#### 1.1.2.4 unsigned int port

Definition at line 33 of file Tracker.h.

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

- Desktop/ECE595/Tracker.h

## 1.2 my\_query Struct Reference

```
#include <gnutella_client.h>
```

### Data Fields

- char \* **msg\_id**
- char \* **file**
- int **ihave**
- int **qhit**
- time\_t **start**
- struct **my\_query** \* **next**

#### 1.2.1 Detailed Description

Definition at line 28 of file gnutella\_client.h.

#### 1.2.2 Field Documentation

##### 1.2.2.1 char\* file

Definition at line 30 of file gnutella\_client.h.

##### 1.2.2.2 int ihave

Definition at line 31 of file gnutella\_client.h.

##### 1.2.2.3 char\* msg\_id

Definition at line 29 of file gnutella\_client.h.

##### 1.2.2.4 struct my\_query\* next

Definition at line 34 of file gnutella\_client.h.

---

#### 1.2.2.5 int qhit

Definition at line 32 of file gnutella\_client.h.

#### 1.2.2.6 time\_t start

Definition at line 33 of file gnutella\_client.h.

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

- Desktop/ECE595/gnutella\_client.h

### 1.3 neighbors Struct Reference

```
#include <gnutella_client.h>
```

#### Data Fields

- struct in\_addr **ipaddr**
- unsigned int **portnum**
- int **neighborid**
- struct **neighbors** \* **next**

#### 1.3.1 Detailed Description

Definition at line 21 of file gnutella\_client.h.

#### 1.3.2 Field Documentation

##### 1.3.2.1 struct in\_addr ipaddr

Definition at line 22 of file gnutella\_client.h.

##### 1.3.2.2 int neighborid

Definition at line 24 of file gnutella\_client.h.

##### 1.3.2.3 struct neighbors\* next

Definition at line 25 of file gnutella\_client.h.

#### 1.3.2.4 unsigned int portnum

Definition at line 23 of file gnutella\_client.h.

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

- Desktop/ECE595/gnutella\_client.h

### 1.4 rcvd\_query Struct Reference

```
#include <gnutella_client.h>
```

#### Data Fields

- char \* **messageid**
- char \* **reqfile**
- struct in\_addr **qryip**
- unsigned int **qport**
- struct **rcvd\_query** \* **next**

#### 1.4.1 Detailed Description

Definition at line 37 of file gnutella\_client.h.

#### 1.4.2 Field Documentation

##### 1.4.2.1 char\* messageid

Definition at line 38 of file gnutella\_client.h.

##### 1.4.2.2 struct rcvd\_query\* next

Definition at line 42 of file gnutella\_client.h.

##### 1.4.2.3 unsigned int qport

Definition at line 41 of file gnutella\_client.h.

##### 1.4.2.4 struct in\_addr qryip

Definition at line 40 of file gnutella\_client.h.

---



#### 1.4.2.5 char\* reqfile

Definition at line 39 of file gnutella\_client.h.

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

- Desktop/ECE595/gnutella\_client.h

## 1.5 topo Struct Reference

```
#include <Tracker.h>
```

### Data Fields

- int **my\_id**
- int \* **peer\_ids**
- char \*\* **initial\_file\_list**
- struct **topo** \* **next**

#### 1.5.1 Detailed Description

Definition at line 17 of file Tracker.h.

#### 1.5.2 Field Documentation

##### 1.5.2.1 char\*\* initial\_file\_list

Definition at line 20 of file Tracker.h.

##### 1.5.2.2 int my\_id

Definition at line 18 of file Tracker.h.

##### 1.5.2.3 struct topo\* next

Definition at line 21 of file Tracker.h.

##### 1.5.2.4 int\* peer\_ids

Definition at line 19 of file Tracker.h.

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

- Desktop/ECE595/Tracker.h



## Chapter 2

# File Documentation

### 2.1 Desktop/ECE595/gnutella\_client.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <stdarg.h>
#include <string.h>
#include <sys/types.h>
#include <fcntl.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <netdb.h>
#include <errno.h>
#include <stdint.h>
#include <ctype.h>
#include "gnutella_client.h"
```

#### Functions

- void **send\_query** (char \*fname, int ttl, char \*\*my\_list, int sd)
- int **file\_lookup** (char \*sfile, char \*\*flist)
- void **send\_establish\_msg** (int sok)
- void **parse\_response** (char \*buf, char \*\*list)
- int **main** (int argc, char \*argv[])

## Variables

- int **error\_flag** = 0
- int **info\_flag** = 0
- int **my\_id** = 0
- int **nodes** = 0
- struct **neighbors** \* **phead** = NULL
- struct **neighbors** \* **eQhead** = NULL
- char \* **my\_ip**
- int **my\_port** = 0
- struct **my\_query** \* **myhead** = NULL
- struct **rcvd\_query** \* **rcvdhead** = NULL
- int **seq\_no** = 1

### 2.1.1 Function Documentation

#### 2.1.1.1 int file\_lookup ( char \* *sfile*, char \*\* *flist* )

Definition at line 109 of file gnutella\_client.c.

#### 2.1.1.2 int main ( int *argc*, char \* *argv*[] )

Definition at line 207 of file gnutella\_client.c.

#### 2.1.1.3 void parse\_response ( char \* *buf*, char \*\* *list* )

Definition at line 146 of file gnutella\_client.c.

#### 2.1.1.4 void send\_establish\_msg ( int *sok* )

Definition at line 120 of file gnutella\_client.c.

#### 2.1.1.5 void send\_query ( char \* *fname*, int *ttl*, char \*\* *my\_list*, int *sd* )

Definition at line 40 of file gnutella\_client.c.

### 2.1.2 Variable Documentation

#### 2.1.2.1 struct neighbors\* eQhead = NULL

Definition at line 31 of file gnutella\_client.c.

---

**2.1.2.2 int error\_flag = 0**

Definition at line 26 of file gnutella\_client.c.

**2.1.2.3 int info\_flag = 0**

Definition at line 27 of file gnutella\_client.c.

**2.1.2.4 int my\_id = 0**

Definition at line 28 of file gnutella\_client.c.

**2.1.2.5 char\* my\_ip**

Definition at line 32 of file gnutella\_client.c.

**2.1.2.6 int my\_port = 0**

Definition at line 33 of file gnutella\_client.c.

**2.1.2.7 struct my\_query\* myhead = NULL**

Definition at line 34 of file gnutella\_client.c.

**2.1.2.8 int nodes = 0**

Definition at line 29 of file gnutella\_client.c.

**2.1.2.9 struct neighbors\* phead = NULL**

Definition at line 30 of file gnutella\_client.c.

**2.1.2.10 struct rcvd\_query\* rcvdhead = NULL**

Definition at line 35 of file gnutella\_client.c.

**2.1.2.11 int seq\_no = 1**

Definition at line 36 of file gnutella\_client.c.

## 2.2 Desktop/ECE595/gnutella\_client.h File Reference

### Data Structures

- struct **neighbors**
- struct **my\_query**
- struct **rcvd\_query**

### Defines

- #define **BUF\_LEN** 3000
- #define **DEF\_TTL** 3
- #define **DEF\_TIMEOUT** 30
- #define **MAX\_SEQ** 32767

### Variables

- const char **join** [] = "This is a JOIN message"

#### 2.2.1 Define Documentation

##### 2.2.1.1 #define BUF\_LEN 3000

Definition at line 16 of file gnutella\_client.h.

##### 2.2.1.2 #define DEF\_TIMEOUT 30

Definition at line 18 of file gnutella\_client.h.

##### 2.2.1.3 #define DEF\_TTL 3

Definition at line 17 of file gnutella\_client.h.

##### 2.2.1.4 #define MAX\_SEQ 32767

Definition at line 19 of file gnutella\_client.h.

#### 2.2.2 Variable Documentation

##### 2.2.2.1 const char join[] = "This is a JOIN message"

Definition at line 14 of file gnutella\_client.h.

---

## 2.3 Desktop/ECE595/Tracker.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <stdarg.h>
#include <string.h>
#include <sys/types.h>
#include <fcntl.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <netdb.h>
#include <errno.h>
#include <stdint.h>
#include <ctype.h>
#include "Tracker.h"
```

### Functions

- void **parse\_config** (char \*configfile)
- int **main** (int argc, char \*argv[])

### Variables

- int **error\_flag** = 0
- int **info\_flag** = 0
- **cfg** \* **head** = NULL
- **cfg** \* **free\_head** = NULL
- **AllocTable** \* **thead** = NULL
- int **count** = 0

#### 2.3.1 Function Documentation

##### 2.3.1.1 int main ( int *argc*, char \* *argv*[] )

Definition at line 156 of file Tracker.c.

### 2.3.1.2 void parse\_config ( char \* *configfile* )

Definition at line 37 of file Tracker.c.

## 2.3.2 Variable Documentation

### 2.3.2.1 int count = 0

Definition at line 31 of file Tracker.c.

### 2.3.2.2 int error\_flag = 0

Definition at line 26 of file Tracker.c.

### 2.3.2.3 cfg\* free\_head = NULL

Definition at line 29 of file Tracker.c.

### 2.3.2.4 cfg\* head = NULL

Definition at line 28 of file Tracker.c.

### 2.3.2.5 int info\_flag = 0

Definition at line 27 of file Tracker.c.

### 2.3.2.6 AllocTable\* thead = NULL

Definition at line 30 of file Tracker.c.

## 2.4 Desktop/ECE595/Tracker.h File Reference

### Data Structures

- struct **topo**
- struct **allocated**

### Defines

- #define **MYPORT** 8500
  - #define **INITIAL\_FILE\_COUNT** 10
  - #define **BUF\_LEN** 2000
-



## Typedefs

- typedef struct **topo cfg**
- typedef struct **allocated AllocTable**

### 2.4.1 Define Documentation

#### 2.4.1.1 #define BUF\_LEN 2000

Definition at line 27 of file Tracker.h.

#### 2.4.1.2 #define INITIAL\_FILE\_COUNT 10

Definition at line 26 of file Tracker.h.

#### 2.4.1.3 #define MYPORT 8500

Definition at line 25 of file Tracker.h.

### 2.4.2 Typedef Documentation

#### 2.4.2.1 typedef struct allocated AllocTable

#### 2.4.2.2 typedef struct topo cfg

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