**CS 6596: Project #3**

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**Source Code:**

// Makefile

all: ds mn fa ha

ds: data\_source.c

gcc -Wall -g data\_source.c -o ds

mn: mobile\_node.c

gcc -Wall -g mobile\_node.c -o mn

fa: foreign\_agent.c

gcc -Wall -g foreign\_agent.c -o fa

ha: home\_agent.c

gcc -Wall -g home\_agent.c -o ha

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// Datasource file

// filename: data\_source.c

// purpose of the file is creating seq number and seding the packets to the home agent

//Declaration of the header files

#include <time.h>

#include <errno.h>

#include <sys/socket.h>

#include <netinet/in.h>

#include <netdb.h>

#include <stdio.h>

#include <stdlib.h>

#include <strings.h>

#include <sys/time.h>

#include <sys/types.h>

#include <unistd.h>

//main function

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

{

struct sockaddr\_in server, client;

struct hostent \*hst, \*gethostbyname();

int sock, sq\_num=1, num;

char buffr[64];

time\_t current;

struct tm\* dt;

if (argc < 3)

{

printf(" Syntax: datasource <home\_agent\_ip> <mobile\_node\_port> \n");

exit(1);

}

// Socket Creation

sock = socket(AF\_INET, SOCK\_DGRAM, 0);

if(sock < 0)

{

perror(" Opening of the datagram socket");

exit(1);

}

// Binding the address of the client

client.sin\_family = AF\_INET;

client.sin\_addr.s\_addr = INADDR\_ANY;

client.sin\_port = 0;

if (bind(sock, (struct sockaddr \*)&client, sizeof(client)) < 0)

{

perror(" Binding Socket Name");

exit(1);

}

server.sin\_family = AF\_INET;

hst = gethostbyname(argv[1]);

if(hst == 0)

{

printf("%s: Unknown Host\n",argv[1]);

exit(2);

}

bcopy(hst->h\_addr, &server.sin\_addr, hst->h\_length);

server.sin\_port = htons(atoi(argv[2]));

while(1)

{

// Packet Creation

time(&current);

sprintf(buffr, "%d", sq\_num);

dt = localtime(&current);

if ((num=sendto(sock,buffr,sizeof(buffr),0,(struct sockaddr \*)&server,sizeof(server))) < 0)

{

perror(" Writing on Datagram Socket");

}

else

{

strftime(buffr, 80, "%H:%M:%S", dt);

printf("Sequence Number = %d Time = %s Dest = %s/%s\n", sq\_num, buffr, argv[1], argv[2]);

fflush(stdout);

}

sq\_num++;

sleep(1);

}

close(sock);

return 0;

}

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// Foreign agent file

// file name: foreign\_agent.c

// foreign agent will act as a router and it weill send the packets coming from the home agent to mobile node.

// header files declaration

#include <sys/types.h>

#include <sys/socket.h>

#include <netinet/in.h>

#include <netdb.h>

#include <stdio.h>

#include <errno.h>

#include <sys/time.h>

#include <stdlib.h>

#include <strings.h>

#include <unistd.h>

#include <time.h>

#include <arpa/inet.h>

#include <string.h>

#include <fcntl.h>

//main function

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

{

socklen\_t clilen;

struct sockaddr\_in server, client, mobilenode;

char buffr[1024];

int num, sock, sq\_num;

time\_t current;

struct tm\* dt;

char time\_buffr[128];

if (argc < 4)

{

printf(" Syntax: foreign\_agent <foreign\_agent\_care\_of\_port> <mobile\_node\_ip> <mobile\_node\_port>\n");

exit(1);

}

// Socket creation

sock = socket(AF\_INET, SOCK\_DGRAM, 0);

if(sock < 0)

{

perror(" Opening of the Datagram socket");

exit(1);

}

server.sin\_family = AF\_INET;

server.sin\_addr.s\_addr = INADDR\_ANY;

server.sin\_port = htons(atoi(argv[1]));

if(bind(sock, (struct sockaddr \*)&server, sizeof(server)))

{

perror(" Binding the Socket name");

exit(1);

}

// occupy the deatils of the mobile node to forward it.

mobilenode.sin\_family = AF\_INET;

mobilenode.sin\_addr.s\_addr = inet\_addr(argv[2]);

mobilenode.sin\_port = htons(atoi(argv[3]));

while (1)

{

bzero(buffr,sizeof(buffr));

time(&current);

dt = localtime(&current);

strftime(time\_buffr, 80, "%H:%M:%S", dt);

num = recvfrom(sock,buffr,1024,0,(struct sockaddr \*)&client,&clilen);

if (num == -1 && (errno != EAGAIN || errno != EWOULDBLOCK))

{

perror("receiver recvfrom");

}

else if (num != -1)

{

sscanf(buffr, "%d", &sq\_num);

printf("Sequence Number = %d Time = %s Forwarded to ", sq\_num, time\_buffr);

fflush(stdout);

}

if ((num=sendto(sock,buffr,sizeof(buffr),0,(struct sockaddr \*)&mobilenode,sizeof(mobilenode))) < 0)

{

perror("writing on datagram socket");

}

else

{

printf("%s/%d\n",inet\_ntoa(mobilenode.sin\_addr), ntohs(mobilenode.sin\_port));

fflush(stdout);

}

}

close(sock);

return 0;

}

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// home agent file

// file name: home\_agent.c

// this will get the packet and forward the packet to care of addr

// here care of address taken with the help of message which is received from the mobile node

// header file declaration

#include <stdio.h>

#include <time.h>

#include <errno.h>

#include <sys/time.h>

#include <unistd.h>

#include <arpa/inet.h>

#include <stdlib.h>

#include <sys/socket.h>

#include <netinet/in.h>

#include <strings.h>

#include <string.h>

#include <sys/types.h>

#include <netdb.h>

#include <fcntl.h>

// main funtion

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

{

socklen\_t clilen;

struct sockaddr\_in server, client, foreignagent;

char buffr[1024];

int num, sock, sq\_num;

time\_t current;

struct tm\* dt;

char time\_buffr[128];

int cop = 0;

char \*p= NULL;

if (argc < 3)

{

printf(" Syntax: home\_agent <care\_of\_address> <mobile\_node\_port>\n");

exit(1);

}

// Socket Creation

sock = socket(AF\_INET, SOCK\_DGRAM, 0);

if(sock < 0)

{

perror(" Opening of the Datagram socket");

exit(1);

}

server.sin\_family = AF\_INET;

server.sin\_addr.s\_addr = INADDR\_ANY;

// Binding the socket with the same port

server.sin\_port = htons(atoi(argv[2]));

if(bind(sock, (struct sockaddr \*)&server, sizeof(server)))

{

perror("binding socket name");

exit(1);

}

// occupy the details of the foreign agent

foreignagent.sin\_family = AF\_INET;

foreignagent.sin\_addr.s\_addr = inet\_addr(argv[1]);

while (1)

{

bzero(buffr,sizeof(buffr));

time(&current);

dt = localtime(&current);

strftime(time\_buffr, 80, "%H:%M:%S", dt);

// blocking logic. wait until the packet comes.

num = recvfrom(sock,buffr,1024,0,(struct sockaddr \*)&client,&clilen);

if (num == -1 && (errno != EAGAIN || errno != EWOULDBLOCK))

{

perror("receiver recvfrom");

}

else if (num != -1)

{

p = strstr(buffr, "REGISTER");

if (p != NULL)

{

// Register message

// Shifting value to the Regsiter

p = strtok(buffr,":");

// Shifting value to the port no

p = strtok(NULL,":");

sscanf(p, "%d", &cop);

printf(" Registration packet received. Time = %s Changing care\_of\_address to %s/%d\n",time\_buffr, argv[1], cop);

fflush(stdout);

continue;

}

else

{

// Packet coming from the data source

sscanf(buffr, "%d", &sq\_num);

if (cop == 0)

{

// If the registration is not deone then the packet will be rejected

printf("Sequence Number = %d Time = %s Rejected No care\_of\_address yet\n",sq\_num, time\_buffr);

fflush(stdout);

continue;

}

else

{

printf("Sequence Number = %d Time = %s Forwarded to ", sq\_num, time\_buffr);

fflush(stdout);

}

}

}

// Here current regi port will be destination port

foreignagent.sin\_port = htons(cop);

if ((num=sendto(sock,buffr,sizeof(buffr),0,(struct sockaddr \*)&foreignagent,sizeof(foreignagent))) < 0)

{

perror("writing on datagram socket");

}

else

{

// logic for display the destination address and time

printf("%s/%d\n",inet\_ntoa(foreignagent.sin\_addr), ntohs(foreignagent.sin\_port));

fflush(stdout);

}

}

close(sock);

return 0;

}

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// mobile node file

// file name: mobile\_node.c

// it will receives the packet from the Foreign Agent & send the regi. packet to the home agent

// this process will execute at every 5 secs.

// this program will terminate after 100 secs.

// header file declaration

#include <stdlib.h>

#include <strings.h>

#include <stdio.h>

#include <unistd.h>

#include <time.h>

#include <sys/types.h>

#include <sys/socket.h>

#include <errno.h>

#include <sys/time.h>

#include <netinet/in.h>

#include <netdb.h>

#include <arpa/inet.h>

#include <string.h>

#include <fcntl.h>

// main function

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

{

socklen\_t clilen;

struct sockaddr\_in server, client, homeagent;

char buffr[1024];

int num, sock, sq\_num;

time\_t current;

struct tm\* dt;

char time\_buffr[128];

struct timeval current\_t, past\_t, start\_t;

int current\_f\_p, base\_f\_p, no\_fa, offset\_f\_p = 0;

if (argc < 6)

{

printf(" Syntax: mobile\_node <mobile\_node\_port> <home\_agent\_address> <foreign\_agent\_ip> <foreign\_agent\_base\_port> <total\_no \_of\_foreign\_agents>\n");

exit(1);

}

//Socket creation

sock = socket(AF\_INET, SOCK\_DGRAM, 0);

if(sock < 0)

{

perror(" Opening of the Datagram socket");

exit(1);

}

// logic for non blocking

int flags = fcntl(sock, F\_GETFL);

flags |= O\_NONBLOCK;

fcntl(sock, F\_SETFL, flags);

// Assign the name for socket

server.sin\_family = AF\_INET;

server.sin\_addr.s\_addr = INADDR\_ANY;

server.sin\_port = htons(atoi(argv[1]));

if(bind(sock, (struct sockaddr \*)&server, sizeof(server)))

{

perror(" Binding the Socket name");

exit(1);

}

//Occupy the details of the home agent for the regi. purpose

homeagent.sin\_family = AF\_INET;

homeagent.sin\_addr.s\_addr = inet\_addr(argv[2]);

homeagent.sin\_port = htons(atoi(argv[1]));

// by using the foreign base port linking is done

no\_fa = atoi(argv[5]);

base\_f\_p = atoi(argv[4]);

gettimeofday(&current\_t, NULL);

memcpy(&past\_t, &current\_t, sizeof(struct timeval));

memcpy(&start\_t, &current\_t, sizeof(struct timeval));

while (1)

{

bzero(buffr,sizeof(buffr));

time(&current);

dt = localtime(&current);

strftime(time\_buffr, 80, "%H:%M:%S", dt);

gettimeofday(&current\_t, NULL);

if (current\_t.tv\_sec - start\_t.tv\_sec >= 100)

{

printf(" 100 Second Completed..Terminating the Program..\n");

break;

}

// logic for sending the regi. message.

if(current\_t.tv\_sec - past\_t.tv\_sec >= 5)

{

offset\_f\_p %= no\_fa; // care of address will be creating by using the offset and base foreign port

current\_f\_p = base\_f\_p+offset\_f\_p;

sprintf(buffr, "REGISTER:%d",current\_f\_p);

if ((num=sendto(sock,buffr,sizeof(buffr),0,(struct sockaddr \*)&homeagent,sizeof(homeagent))) < 0)

{

perror("writing on datagram socket");

}

else

{

printf("Registration sent. Time = %s New care-of address = %s/%d\n",time\_buffr, argv[3],current\_f\_p);

fflush(stdout);

}

offset\_f\_p++;

memcpy(&past\_t, &current\_t, sizeof(struct timeval));

continue;

}

num = recvfrom(sock,buffr,1024,0,(struct sockaddr \*)&client,&clilen);

if (num == -1 && (errno != EAGAIN || errno != EWOULDBLOCK))

{

perror("receiver recvfrom");

}

else if (num > 0)

{

sscanf(buffr, "%d", &sq\_num);

if (ntohs(client.sin\_port) != current\_f\_p)

{

printf("Sequence Number = %d Time = %s FA = %s/%d Rejected\n",sq\_num, time\_buffr, inet\_ntoa(client.sin\_addr), ntohs(client.sin\_port));

}

else

{

printf("Sequence Number = %d Time = %s FA = %s/%d Accepted\n",sq\_num, time\_buffr, inet\_ntoa(client.sin\_addr), ntohs(client.sin\_port));

}

fflush(stdout);

}

// logic is implemented for the proper utlilization of the CPU

usleep(100000);

}

close(sock);

return 0;

}

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**Output (Script file)**

**Make\_file\_output**

I run the make command several times, so the time for the following output is different than the other output files

Script started on Wed 30 Nov 2016 11:12:20 AM PST

]0;qd6395@trig:~/p3[qd6395@trig p3]$ ll

[00mtotal 20

-rw-r--r-- 1 qd6395 student 227 Nov 30 08:49 [00mMakefile[00m

-rw-r--r-- 1 qd6395 student 1816 Nov 30 10:26 [00mdata\_source.c[00m

-rw-r--r-- 1 qd6395 student 2192 Nov 30 10:38 [00mforeign\_agent.c[00m

-rw-r--r-- 1 qd6395 student 3296 Nov 30 10:54 [00mhome\_agent.c[00m

-rw-r--r-- 1 qd6395 student 3736 Nov 30 11:10 [00mmobile\_node.c[00m

-rw-r--r-- 1 qd6395 student 0 Nov 30 11:12 [00mtypescript[00m

[m]0;qd6395@trig:~/p3[qd6395@trig p3]$ make

gcc -Wall -g data\_source.c -o ds

gcc -Wall -g mobile\_node.c -o mn

gcc -Wall -g foreign\_agent.c -o fa

gcc -Wall -g home\_agent.c -o ha

]0;qd6395@trig:~/p3[qd6395@trig p3]$ exit

exit

Script done on Wed 30 Nov 2016 11:12:23 AM PST

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**Data\_Source\_Output**

Script started on Wed 30 Nov 2016 03:17:13 PM PST

\_]0;qd6395@trig:~/p3\_[qd6395@trig p3]$ script \_\_[K\_\_[K\_\_[K\_\_[K\_\_[K\_\_[K\_\_[K\_\_\_\_\_\_./\_\_[K\_\_[K\_./ ds\_\_[K\_\_[K\_\_[Kds 134.154.190.160 140000\_\_[K

Sequence Number = 1 Time = 15:19:14 Dest = 134.154.190.160/14000

Sequence Number = 2 Time = 15:19:15 Dest = 134.154.190.160/14000

Sequence Number = 3 Time = 15:19:16 Dest = 134.154.190.160/14000

Sequence Number = 4 Time = 15:19:17 Dest = 134.154.190.160/14000

Sequence Number = 5 Time = 15:19:18 Dest = 134.154.190.160/14000

Sequence Number = 6 Time = 15:19:19 Dest = 134.154.190.160/14000

Sequence Number = 7 Time = 15:19:20 Dest = 134.154.190.160/14000

Sequence Number = 8 Time = 15:19:22 Dest = 134.154.190.160/14000

Sequence Number = 9 Time = 15:19:23 Dest = 134.154.190.160/14000

Sequence Number = 10 Time = 15:19:24 Dest = 134.154.190.160/14000

Sequence Number = 11 Time = 15:19:25 Dest = 134.154.190.160/14000

Sequence Number = 12 Time = 15:19:26 Dest = 134.154.190.160/14000

Sequence Number = 13 Time = 15:19:27 Dest = 134.154.190.160/14000

Sequence Number = 14 Time = 15:19:28 Dest = 134.154.190.160/14000

Sequence Number = 15 Time = 15:19:29 Dest = 134.154.190.160/14000

Sequence Number = 16 Time = 15:19:30 Dest = 134.154.190.160/14000

Sequence Number = 17 Time = 15:19:31 Dest = 134.154.190.160/14000

Sequence Number = 18 Time = 15:19:32 Dest = 134.154.190.160/14000

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Sequence Number = 20 Time = 15:19:34 Dest = 134.154.190.160/14000

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Sequence Number = 22 Time = 15:19:36 Dest = 134.154.190.160/14000

Sequence Number = 23 Time = 15:19:37 Dest = 134.154.190.160/14000

Sequence Number = 24 Time = 15:19:38 Dest = 134.154.190.160/14000

Sequence Number = 25 Time = 15:19:39 Dest = 134.154.190.160/14000

Sequence Number = 26 Time = 15:19:40 Dest = 134.154.190.160/14000

Sequence Number = 27 Time = 15:19:41 Dest = 134.154.190.160/14000

Sequence Number = 28 Time = 15:19:42 Dest = 134.154.190.160/14000

Sequence Number = 29 Time = 15:19:43 Dest = 134.154.190.160/14000

Sequence Number = 30 Time = 15:19:44 Dest = 134.154.190.160/14000

Sequence Number = 31 Time = 15:19:45 Dest = 134.154.190.160/14000

Sequence Number = 32 Time = 15:19:46 Dest = 134.154.190.160/14000

Sequence Number = 33 Time = 15:19:47 Dest = 134.154.190.160/14000

Sequence Number = 34 Time = 15:19:48 Dest = 134.154.190.160/14000

Sequence Number = 35 Time = 15:19:49 Dest = 134.154.190.160/14000

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Sequence Number = 46 Time = 15:20:00 Dest = 134.154.190.160/14000

Sequence Number = 47 Time = 15:20:01 Dest = 134.154.190.160/14000

Sequence Number = 48 Time = 15:20:02 Dest = 134.154.190.160/14000

Sequence Number = 49 Time = 15:20:03 Dest = 134.154.190.160/14000

Sequence Number = 50 Time = 15:20:04 Dest = 134.154.190.160/14000

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Sequence Number = 58 Time = 15:20:12 Dest = 134.154.190.160/14000

Sequence Number = 59 Time = 15:20:13 Dest = 134.154.190.160/14000

Sequence Number = 60 Time = 15:20:14 Dest = 134.154.190.160/14000

Sequence Number = 61 Time = 15:20:15 Dest = 134.154.190.160/14000

Sequence Number = 62 Time = 15:20:16 Dest = 134.154.190.160/14000

Sequence Number = 63 Time = 15:20:17 Dest = 134.154.190.160/14000

Sequence Number = 64 Time = 15:20:18 Dest = 134.154.190.160/14000

Sequence Number = 65 Time = 15:20:19 Dest = 134.154.190.160/14000

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Sequence Number = 69 Time = 15:20:23 Dest = 134.154.190.160/14000

Sequence Number = 70 Time = 15:20:24 Dest = 134.154.190.160/14000

Sequence Number = 71 Time = 15:20:25 Dest = 134.154.190.160/14000

Sequence Number = 72 Time = 15:20:26 Dest = 134.154.190.160/14000

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Sequence Number = 75 Time = 15:20:29 Dest = 134.154.190.160/14000

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Sequence Number = 77 Time = 15:20:31 Dest = 134.154.190.160/14000

Sequence Number = 78 Time = 15:20:32 Dest = 134.154.190.160/14000

Sequence Number = 79 Time = 15:20:33 Dest = 134.154.190.160/14000

Sequence Number = 80 Time = 15:20:34 Dest = 134.154.190.160/14000

Sequence Number = 81 Time = 15:20:35 Dest = 134.154.190.160/14000

Sequence Number = 82 Time = 15:20:37 Dest = 134.154.190.160/14000

Sequence Number = 83 Time = 15:20:38 Dest = 134.154.190.160/14000

Sequence Number = 84 Time = 15:20:39 Dest = 134.154.190.160/14000

Sequence Number = 85 Time = 15:20:40 Dest = 134.154.190.160/14000

Sequence Number = 86 Time = 15:20:41 Dest = 134.154.190.160/14000

Sequence Number = 87 Time = 15:20:42 Dest = 134.154.190.160/14000

Sequence Number = 88 Time = 15:20:43 Dest = 134.154.190.160/14000

Sequence Number = 89 Time = 15:20:44 Dest = 134.154.190.160/14000

Sequence Number = 90 Time = 15:20:45 Dest = 134.154.190.160/14000

Sequence Number = 91 Time = 15:20:46 Dest = 134.154.190.160/14000

Sequence Number = 92 Time = 15:20:47 Dest = 134.154.190.160/14000

Sequence Number = 93 Time = 15:20:48 Dest = 134.154.190.160/14000

Sequence Number = 94 Time = 15:20:49 Dest = 134.154.190.160/14000

Sequence Number = 95 Time = 15:20:50 Dest = 134.154.190.160/14000

Sequence Number = 96 Time = 15:20:51 Dest = 134.154.190.160/14000

Sequence Number = 97 Time = 15:20:52 Dest = 134.154.190.160/14000

Sequence Number = 98 Time = 15:20:53 Dest = 134.154.190.160/14000

Sequence Number = 99 Time = 15:20:54 Dest = 134.154.190.160/14000

Sequence Number = 100 Time = 15:20:55 Dest = 134.154.190.160/14000

Sequence Number = 101 Time = 15:20:56 Dest = 134.154.190.160/14000

Sequence Number = 102 Time = 15:20:57 Dest = 134.154.190.160/14000

Sequence Number = 103 Time = 15:20:58 Dest = 134.154.190.160/14000

Sequence Number = 104 Time = 15:20:59 Dest = 134.154.190.160/14000

Sequence Number = 105 Time = 15:21:00 Dest = 134.154.190.160/14000

Sequence Number = 106 Time = 15:21:01 Dest = 134.154.190.160/14000

Sequence Number = 107 Time = 15:21:02 Dest = 134.154.190.160/14000

Sequence Number = 108 Time = 15:21:03 Dest = 134.154.190.160/14000

Sequence Number = 109 Time = 15:21:04 Dest = 134.154.190.160/14000

Sequence Number = 110 Time = 15:21:05 Dest = 134.154.190.160/14000

Sequence Number = 111 Time = 15:21:06 Dest = 134.154.190.160/14000

Sequence Number = 112 Time = 15:21:07 Dest = 134.154.190.160/14000

Sequence Number = 113 Time = 15:21:08 Dest = 134.154.190.160/14000

Sequence Number = 114 Time = 15:21:09 Dest = 134.154.190.160/14000

Sequence Number = 115 Time = 15:21:10 Dest = 134.154.190.160/14000

Sequence Number = 116 Time = 15:21:11 Dest = 134.154.190.160/14000

\_]0;qd6395@trig:~/p3\_[qd6395@trig p3]$ exit

exit

Script done on Wed 30 Nov 2016 03:21:26 PM PST

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**Home\_Agent\_Output**

Script started on Wed 30 Nov 2016 03:17:34 PM PST

\_]0;qd6395@geometry:~/p3\_[qd6395@geometry p3]$ ./ha 134.154.190.157 14000

Sequence Number = 5 Time = 15:19:18 Rejected No care\_of\_address yet

Sequence Number = 6 Time = 15:19:18 Rejected No care\_of\_address yet

Sequence Number = 7 Time = 15:19:19 Rejected No care\_of\_address yet

Sequence Number = 8 Time = 15:19:20 Rejected No care\_of\_address yet

Sequence Number = 9 Time = 15:19:21 Rejected No care\_of\_address yet

Sequence Number = 10 Time = 15:19:23 Rejected No care\_of\_address yet

Sequence Number = 11 Time = 15:19:24 Rejected No care\_of\_address yet

Sequence Number = 12 Time = 15:19:25 Rejected No care\_of\_address yet

Registration packet received. Time = 15:19:26 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 13 Time = 15:19:26 Forwarded to 134.154.190.157/13000

Sequence Number = 14 Time = 15:19:27 Forwarded to 134.154.190.157/13000

Sequence Number = 15 Time = 15:19:28 Forwarded to 134.154.190.157/13000

Sequence Number = 16 Time = 15:19:29 Forwarded to 134.154.190.157/13000

Sequence Number = 17 Time = 15:19:30 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:19:31 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 18 Time = 15:19:31 Forwarded to 134.154.190.157/13001

Sequence Number = 19 Time = 15:19:32 Forwarded to 134.154.190.157/13001

Sequence Number = 20 Time = 15:19:33 Forwarded to 134.154.190.157/13001

Sequence Number = 21 Time = 15:19:34 Forwarded to 134.154.190.157/13001

Sequence Number = 22 Time = 15:19:35 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:19:36 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 23 Time = 15:19:36 Forwarded to 134.154.190.157/13000

Sequence Number = 24 Time = 15:19:37 Forwarded to 134.154.190.157/13000

Sequence Number = 25 Time = 15:19:38 Forwarded to 134.154.190.157/13000

Sequence Number = 26 Time = 15:19:39 Forwarded to 134.154.190.157/13000

Sequence Number = 27 Time = 15:19:40 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:19:41 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 28 Time = 15:19:41 Forwarded to 134.154.190.157/13001

Sequence Number = 29 Time = 15:19:42 Forwarded to 134.154.190.157/13001

Sequence Number = 30 Time = 15:19:43 Forwarded to 134.154.190.157/13001

Sequence Number = 31 Time = 15:19:44 Forwarded to 134.154.190.157/13001

Sequence Number = 32 Time = 15:19:45 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:19:46 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 33 Time = 15:19:46 Forwarded to 134.154.190.157/13000

Sequence Number = 34 Time = 15:19:47 Forwarded to 134.154.190.157/13000

Sequence Number = 35 Time = 15:19:48 Forwarded to 134.154.190.157/13000

Sequence Number = 36 Time = 15:19:49 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:19:50 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 37 Time = 15:19:51 Forwarded to 134.154.190.157/13001

Sequence Number = 38 Time = 15:19:51 Forwarded to 134.154.190.157/13001

Sequence Number = 39 Time = 15:19:52 Forwarded to 134.154.190.157/13001

Sequence Number = 40 Time = 15:19:53 Forwarded to 134.154.190.157/13001

Sequence Number = 41 Time = 15:19:54 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:19:55 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 42 Time = 15:19:56 Forwarded to 134.154.190.157/13000

Sequence Number = 43 Time = 15:19:56 Forwarded to 134.154.190.157/13000

Sequence Number = 44 Time = 15:19:57 Forwarded to 134.154.190.157/13000

Sequence Number = 45 Time = 15:19:58 Forwarded to 134.154.190.157/13000

Sequence Number = 46 Time = 15:19:59 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:20:00 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 47 Time = 15:20:01 Forwarded to 134.154.190.157/13001

Sequence Number = 48 Time = 15:20:01 Forwarded to 134.154.190.157/13001

Sequence Number = 49 Time = 15:20:02 Forwarded to 134.154.190.157/13001

Sequence Number = 50 Time = 15:20:03 Forwarded to 134.154.190.157/13001

Sequence Number = 51 Time = 15:20:04 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:20:05 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 52 Time = 15:20:06 Forwarded to 134.154.190.157/13000

Sequence Number = 53 Time = 15:20:06 Forwarded to 134.154.190.157/13000

Sequence Number = 54 Time = 15:20:07 Forwarded to 134.154.190.157/13000

Sequence Number = 55 Time = 15:20:08 Forwarded to 134.154.190.157/13000

Sequence Number = 56 Time = 15:20:09 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:20:10 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 57 Time = 15:20:11 Forwarded to 134.154.190.157/13001

Sequence Number = 58 Time = 15:20:11 Forwarded to 134.154.190.157/13001

Sequence Number = 59 Time = 15:20:12 Forwarded to 134.154.190.157/13001

Sequence Number = 60 Time = 15:20:13 Forwarded to 134.154.190.157/13001

Sequence Number = 61 Time = 15:20:14 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:20:15 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 62 Time = 15:20:16 Forwarded to 134.154.190.157/13000

Sequence Number = 63 Time = 15:20:16 Forwarded to 134.154.190.157/13000

Sequence Number = 64 Time = 15:20:17 Forwarded to 134.154.190.157/13000

Sequence Number = 65 Time = 15:20:18 Forwarded to 134.154.190.157/13000

Sequence Number = 66 Time = 15:20:19 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:20:20 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 67 Time = 15:20:21 Forwarded to 134.154.190.157/13001

Sequence Number = 68 Time = 15:20:21 Forwarded to 134.154.190.157/13001

Sequence Number = 69 Time = 15:20:22 Forwarded to 134.154.190.157/13001

Sequence Number = 70 Time = 15:20:23 Forwarded to 134.154.190.157/13001

Sequence Number = 71 Time = 15:20:24 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:20:25 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 72 Time = 15:20:26 Forwarded to 134.154.190.157/13000

Sequence Number = 73 Time = 15:20:26 Forwarded to 134.154.190.157/13000

Sequence Number = 74 Time = 15:20:27 Forwarded to 134.154.190.157/13000

Sequence Number = 75 Time = 15:20:28 Forwarded to 134.154.190.157/13000

Sequence Number = 76 Time = 15:20:29 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:20:30 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 77 Time = 15:20:31 Forwarded to 134.154.190.157/13001

Sequence Number = 78 Time = 15:20:31 Forwarded to 134.154.190.157/13001

Sequence Number = 79 Time = 15:20:32 Forwarded to 134.154.190.157/13001

Sequence Number = 80 Time = 15:20:33 Forwarded to 134.154.190.157/13001

Sequence Number = 81 Time = 15:20:34 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:20:35 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 82 Time = 15:20:36 Forwarded to 134.154.190.157/13000

Sequence Number = 83 Time = 15:20:37 Forwarded to 134.154.190.157/13000

Sequence Number = 84 Time = 15:20:38 Forwarded to 134.154.190.157/13000

Sequence Number = 85 Time = 15:20:39 Forwarded to 134.154.190.157/13000

Sequence Number = 86 Time = 15:20:40 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:20:41 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 87 Time = 15:20:41 Forwarded to 134.154.190.157/13001

Sequence Number = 88 Time = 15:20:42 Forwarded to 134.154.190.157/13001

Sequence Number = 89 Time = 15:20:43 Forwarded to 134.154.190.157/13001

Sequence Number = 90 Time = 15:20:44 Forwarded to 134.154.190.157/13001

Sequence Number = 91 Time = 15:20:45 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:20:46 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 92 Time = 15:20:46 Forwarded to 134.154.190.157/13000

Sequence Number = 93 Time = 15:20:47 Forwarded to 134.154.190.157/13000

Sequence Number = 94 Time = 15:20:48 Forwarded to 134.154.190.157/13000

Sequence Number = 95 Time = 15:20:49 Forwarded to 134.154.190.157/13000

Sequence Number = 96 Time = 15:20:50 Forwarded to 134.154.190.157/13000

Registration packet received. Time = 15:20:51 Changing care\_of\_address to 134.154.190.157/13001

Sequence Number = 97 Time = 15:20:51 Forwarded to 134.154.190.157/13001

Sequence Number = 98 Time = 15:20:52 Forwarded to 134.154.190.157/13001

Sequence Number = 99 Time = 15:20:53 Forwarded to 134.154.190.157/13001

Sequence Number = 100 Time = 15:20:54 Forwarded to 134.154.190.157/13001

Sequence Number = 101 Time = 15:20:55 Forwarded to 134.154.190.157/13001

Registration packet received. Time = 15:20:56 Changing care\_of\_address to 134.154.190.157/13000

Sequence Number = 102 Time = 15:20:56 Forwarded to 134.154.190.157/13000

Sequence Number = 103 Time = 15:20:57 Forwarded to 134.154.190.157/13000

Sequence Number = 104 Time = 15:20:58 Forwarded to 134.154.190.157/13000

Sequence Number = 105 Time = 15:20:59 Forwarded to 134.154.190.157/13000

Sequence Number = 106 Time = 15:21:00 Forwarded to 134.154.190.157/13000

Sequence Number = 107 Time = 15:21:01 Forwarded to 134.154.190.157/13000

Sequence Number = 108 Time = 15:21:02 Forwarded to 134.154.190.157/13000

Sequence Number = 109 Time = 15:21:03 Forwarded to 134.154.190.157/13000

Sequence Number = 110 Time = 15:21:04 Forwarded to 134.154.190.157/13000

Sequence Number = 111 Time = 15:21:05 Forwarded to 134.154.190.157/13000

Sequence Number = 112 Time = 15:21:06 Forwarded to 134.154.190.157/13000

Sequence Number = 113 Time = 15:21:07 Forwarded to 134.154.190.157/13000

Sequence Number = 114 Time = 15:21:08 Forwarded to 134.154.190.157/13000

Sequence Number = 115 Time = 15:21:09 Forwarded to 134.154.190.157/13000

Sequence Number = 116 Time = 15:21:10 Forwarded to 134.154.190.157/13000

\_]0;qd6395@geometry:~/p3\_[qd6395@geometry p3]$ exit

exit

Script done on Wed 30 Nov 2016 03:21:24 PM PST

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**Foreign\_Agent\_1\_Output**

Script started on Wed 30 Nov 2016 03:17:24 PM PST

\_]0;qd6395@algebra:~/p3\_[qd6395@algebra p3]$ ,.f\_\_[K\_\_[K\_\_[K\_,\_\_[K\_./fa 134.154.1980\_\_[K\_\_[K0.157 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[C\_[C\_[1@ \_\_[1@1\_[1@3\_[1@0\_[1@0\_[1@0\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_[C\_\_\_\_\_14000

Sequence Number = 13 Time = 15:19:17 Forwarded to 134.154.190.157/14000

Sequence Number = 14 Time = 15:19:27 Forwarded to 134.154.190.157/14000

Sequence Number = 15 Time = 15:19:28 Forwarded to 134.154.190.157/14000

Sequence Number = 16 Time = 15:19:29 Forwarded to 134.154.190.157/14000

Sequence Number = 17 Time = 15:19:30 Forwarded to 134.154.190.157/14000

Sequence Number = 23 Time = 15:19:31 Forwarded to 134.154.190.157/14000

Sequence Number = 24 Time = 15:19:37 Forwarded to 134.154.190.157/14000

Sequence Number = 25 Time = 15:19:38 Forwarded to 134.154.190.157/14000

Sequence Number = 26 Time = 15:19:40 Forwarded to 134.154.190.157/14000

Sequence Number = 27 Time = 15:19:41 Forwarded to 134.154.190.157/14000

Sequence Number = 33 Time = 15:19:42 Forwarded to 134.154.190.157/14000

Sequence Number = 34 Time = 15:19:48 Forwarded to 134.154.190.157/14000

Sequence Number = 35 Time = 15:19:49 Forwarded to 134.154.190.157/14000

Sequence Number = 36 Time = 15:19:50 Forwarded to 134.154.190.157/14000

Sequence Number = 42 Time = 15:19:51 Forwarded to 134.154.190.157/14000

Sequence Number = 43 Time = 15:19:57 Forwarded to 134.154.190.157/14000

Sequence Number = 44 Time = 15:19:58 Forwarded to 134.154.190.157/14000

Sequence Number = 45 Time = 15:19:59 Forwarded to 134.154.190.157/14000

Sequence Number = 46 Time = 15:20:00 Forwarded to 134.154.190.157/14000

Sequence Number = 52 Time = 15:20:01 Forwarded to 134.154.190.157/14000

Sequence Number = 53 Time = 15:20:07 Forwarded to 134.154.190.157/14000

Sequence Number = 54 Time = 15:20:08 Forwarded to 134.154.190.157/14000

Sequence Number = 55 Time = 15:20:09 Forwarded to 134.154.190.157/14000

Sequence Number = 56 Time = 15:20:10 Forwarded to 134.154.190.157/14000

Sequence Number = 62 Time = 15:20:11 Forwarded to 134.154.190.157/14000

Sequence Number = 63 Time = 15:20:17 Forwarded to 134.154.190.157/14000

Sequence Number = 64 Time = 15:20:18 Forwarded to 134.154.190.157/14000

Sequence Number = 65 Time = 15:20:19 Forwarded to 134.154.190.157/14000

Sequence Number = 66 Time = 15:20:20 Forwarded to 134.154.190.157/14000

Sequence Number = 72 Time = 15:20:21 Forwarded to 134.154.190.157/14000

Sequence Number = 73 Time = 15:20:27 Forwarded to 134.154.190.157/14000

Sequence Number = 74 Time = 15:20:28 Forwarded to 134.154.190.157/14000

Sequence Number = 75 Time = 15:20:29 Forwarded to 134.154.190.157/14000

Sequence Number = 76 Time = 15:20:30 Forwarded to 134.154.190.157/14000

Sequence Number = 82 Time = 15:20:31 Forwarded to 134.154.190.157/14000

Sequence Number = 83 Time = 15:20:37 Forwarded to 134.154.190.157/14000

Sequence Number = 84 Time = 15:20:38 Forwarded to 134.154.190.157/14000

Sequence Number = 85 Time = 15:20:39 Forwarded to 134.154.190.157/14000

Sequence Number = 86 Time = 15:20:40 Forwarded to 134.154.190.157/14000

Sequence Number = 92 Time = 15:20:41 Forwarded to 134.154.190.157/14000

Sequence Number = 93 Time = 15:20:47 Forwarded to 134.154.190.157/14000

Sequence Number = 94 Time = 15:20:48 Forwarded to 134.154.190.157/14000

Sequence Number = 95 Time = 15:20:49 Forwarded to 134.154.190.157/14000

Sequence Number = 96 Time = 15:20:50 Forwarded to 134.154.190.157/14000

Sequence Number = 102 Time = 15:20:51 Forwarded to 134.154.190.157/14000

Sequence Number = 103 Time = 15:20:58 Forwarded to 134.154.190.157/14000

Sequence Number = 104 Time = 15:20:59 Forwarded to 134.154.190.157/14000

Sequence Number = 105 Time = 15:21:00 Forwarded to 134.154.190.157/14000

Sequence Number = 106 Time = 15:21:01 Forwarded to 134.154.190.157/14000

Sequence Number = 107 Time = 15:21:02 Forwarded to 134.154.190.157/14000

Sequence Number = 108 Time = 15:21:03 Forwarded to 134.154.190.157/14000

Sequence Number = 109 Time = 15:21:04 Forwarded to 134.154.190.157/14000

Sequence Number = 110 Time = 15:21:05 Forwarded to 134.154.190.157/14000

Sequence Number = 111 Time = 15:21:06 Forwarded to 134.154.190.157/14000

Sequence Number = 112 Time = 15:21:07 Forwarded to 134.154.190.157/14000

Sequence Number = 113 Time = 15:21:08 Forwarded to 134.154.190.157/14000

Sequence Number = 114 Time = 15:21:09 Forwarded to 134.154.190.157/14000

Sequence Number = 115 Time = 15:21:10 Forwarded to 134.154.190.157/14000

Sequence Number = 116 Time = 15:21:11 Forwarded to 134.154.190.157/14000

\_]0;qd6395@algebra:~/p3\_[qd6395@algebra p3]$ exit

exit

Script done on Wed 30 Nov 2016 03:21:22 PM PST

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**Foreign\_Agent\_2\_Output**

Script started on Wed 30 Nov 2016 03:17:29 PM PST

\_]0;qd6395@algebra:~/p3\_[qd6395@algebra p3]$ ./\_d\_\_[Kfa 13001 134.154.180\_\_[K\_\_[K90.157 14000

Sequence Number = 18 Time = 15:19:20 Forwarded to 134.154.190.157/14000

Sequence Number = 19 Time = 15:19:32 Forwarded to 134.154.190.157/14000

Sequence Number = 20 Time = 15:19:33 Forwarded to 134.154.190.157/14000

Sequence Number = 21 Time = 15:19:34 Forwarded to 134.154.190.157/14000

Sequence Number = 22 Time = 15:19:35 Forwarded to 134.154.190.157/14000

Sequence Number = 28 Time = 15:19:36 Forwarded to 134.154.190.157/14000

Sequence Number = 29 Time = 15:19:43 Forwarded to 134.154.190.157/14000

Sequence Number = 30 Time = 15:19:44 Forwarded to 134.154.190.157/14000

Sequence Number = 31 Time = 15:19:45 Forwarded to 134.154.190.157/14000

Sequence Number = 32 Time = 15:19:46 Forwarded to 134.154.190.157/14000

Sequence Number = 37 Time = 15:19:47 Forwarded to 134.154.190.157/14000

Sequence Number = 38 Time = 15:19:52 Forwarded to 134.154.190.157/14000

Sequence Number = 39 Time = 15:19:53 Forwarded to 134.154.190.157/14000

Sequence Number = 40 Time = 15:19:54 Forwarded to 134.154.190.157/14000

Sequence Number = 41 Time = 15:19:55 Forwarded to 134.154.190.157/14000

Sequence Number = 47 Time = 15:19:56 Forwarded to 134.154.190.157/14000

Sequence Number = 48 Time = 15:20:02 Forwarded to 134.154.190.157/14000

Sequence Number = 49 Time = 15:20:03 Forwarded to 134.154.190.157/14000

Sequence Number = 50 Time = 15:20:04 Forwarded to 134.154.190.157/14000

Sequence Number = 51 Time = 15:20:05 Forwarded to 134.154.190.157/14000

Sequence Number = 57 Time = 15:20:06 Forwarded to 134.154.190.157/14000

Sequence Number = 58 Time = 15:20:12 Forwarded to 134.154.190.157/14000

Sequence Number = 59 Time = 15:20:13 Forwarded to 134.154.190.157/14000

Sequence Number = 60 Time = 15:20:14 Forwarded to 134.154.190.157/14000

Sequence Number = 61 Time = 15:20:15 Forwarded to 134.154.190.157/14000

Sequence Number = 67 Time = 15:20:16 Forwarded to 134.154.190.157/14000

Sequence Number = 68 Time = 15:20:22 Forwarded to 134.154.190.157/14000

Sequence Number = 69 Time = 15:20:23 Forwarded to 134.154.190.157/14000

Sequence Number = 70 Time = 15:20:24 Forwarded to 134.154.190.157/14000

Sequence Number = 71 Time = 15:20:25 Forwarded to 134.154.190.157/14000

Sequence Number = 77 Time = 15:20:26 Forwarded to 134.154.190.157/14000

Sequence Number = 78 Time = 15:20:32 Forwarded to 134.154.190.157/14000

Sequence Number = 79 Time = 15:20:33 Forwarded to 134.154.190.157/14000

Sequence Number = 80 Time = 15:20:34 Forwarded to 134.154.190.157/14000

Sequence Number = 81 Time = 15:20:35 Forwarded to 134.154.190.157/14000

Sequence Number = 87 Time = 15:20:36 Forwarded to 134.154.190.157/14000

Sequence Number = 88 Time = 15:20:42 Forwarded to 134.154.190.157/14000

Sequence Number = 89 Time = 15:20:43 Forwarded to 134.154.190.157/14000

Sequence Number = 90 Time = 15:20:44 Forwarded to 134.154.190.157/14000

Sequence Number = 91 Time = 15:20:45 Forwarded to 134.154.190.157/14000

Sequence Number = 97 Time = 15:20:46 Forwarded to 134.154.190.157/14000

Sequence Number = 98 Time = 15:20:52 Forwarded to 134.154.190.157/14000

Sequence Number = 99 Time = 15:20:53 Forwarded to 134.154.190.157/14000

Sequence Number = 100 Time = 15:20:54 Forwarded to 134.154.190.157/14000

Sequence Number = 101 Time = 15:20:56 Forwarded to 134.154.190.157/14000

\_]0;qd6395@algebra:~/p3\_[qd6395@algebra p3]$ exit

exit

Script done on Wed 30 Nov 2016 03:21:18 PM PST

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**Mobile\_Node\_Output**

Script started on Wed 30 Nov 2016 03:17:39 PM PST

\_]0;qd6395@algebra:~/p3\_[qd6395@algebra p3]$ ./mn 1300\_\_[K\_\_[K\_\_[K4000 134.154.190.160 134.143.190.157 13000 2

Registration sent. Time = 15:19:27 New care-of address = 134.143.190.157/13000

Sequence Number = 13 Time = 15:19:27 FA = 134.154.190.157/13000 Accepted

Sequence Number = 14 Time = 15:19:28 FA = 134.154.190.157/13000 Accepted

Sequence Number = 15 Time = 15:19:30 FA = 134.154.190.157/13000 Accepted

Sequence Number = 16 Time = 15:19:31 FA = 134.154.190.157/13000 Accepted

Sequence Number = 17 Time = 15:19:31 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:19:32 New care-of address = 134.143.190.157/13001

Sequence Number = 18 Time = 15:19:32 FA = 134.154.190.157/13001 Accepted

Sequence Number = 19 Time = 15:19:34 FA = 134.154.190.157/13001 Accepted

Sequence Number = 20 Time = 15:19:35 FA = 134.154.190.157/13001 Accepted

Sequence Number = 21 Time = 15:19:35 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:19:37 New care-of address = 134.143.190.157/13000

Sequence Number = 22 Time = 15:19:37 FA = 134.154.190.157/13001 Rejected

Sequence Number = 23 Time = 15:19:38 FA = 134.154.190.157/13000 Accepted

Sequence Number = 24 Time = 15:19:39 FA = 134.154.190.157/13000 Accepted

Sequence Number = 25 Time = 15:19:40 FA = 134.154.190.157/13000 Accepted

Sequence Number = 26 Time = 15:19:41 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:19:42 New care-of address = 134.143.190.157/13001

Sequence Number = 27 Time = 15:19:42 FA = 134.154.190.157/13000 Rejected

Sequence Number = 28 Time = 15:19:43 FA = 134.154.190.157/13001 Accepted

Sequence Number = 29 Time = 15:19:44 FA = 134.154.190.157/13001 Accepted

Sequence Number = 30 Time = 15:19:45 FA = 134.154.190.157/13001 Accepted

Sequence Number = 31 Time = 15:19:46 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:19:47 New care-of address = 134.143.190.157/13000

Sequence Number = 32 Time = 15:19:47 FA = 134.154.190.157/13001 Rejected

Sequence Number = 33 Time = 15:19:48 FA = 134.154.190.157/13000 Accepted

Sequence Number = 34 Time = 15:19:49 FA = 134.154.190.157/13000 Accepted

Sequence Number = 35 Time = 15:19:50 FA = 134.154.190.157/13000 Accepted

Sequence Number = 36 Time = 15:19:51 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:19:52 New care-of address = 134.143.190.157/13001

Sequence Number = 37 Time = 15:19:52 FA = 134.154.190.157/13001 Accepted

Sequence Number = 38 Time = 15:19:53 FA = 134.154.190.157/13001 Accepted

Sequence Number = 39 Time = 15:19:54 FA = 134.154.190.157/13001 Accepted

Sequence Number = 40 Time = 15:19:55 FA = 134.154.190.157/13001 Accepted

Sequence Number = 41 Time = 15:19:56 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:19:57 New care-of address = 134.143.190.157/13000

Sequence Number = 42 Time = 15:19:57 FA = 134.154.190.157/13000 Accepted

Sequence Number = 43 Time = 15:19:58 FA = 134.154.190.157/13000 Accepted

Sequence Number = 44 Time = 15:19:59 FA = 134.154.190.157/13000 Accepted

Sequence Number = 45 Time = 15:20:00 FA = 134.154.190.157/13000 Accepted

Sequence Number = 46 Time = 15:20:01 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:20:02 New care-of address = 134.143.190.157/13001

Sequence Number = 47 Time = 15:20:02 FA = 134.154.190.157/13001 Accepted

Sequence Number = 48 Time = 15:20:03 FA = 134.154.190.157/13001 Accepted

Sequence Number = 49 Time = 15:20:04 FA = 134.154.190.157/13001 Accepted

Sequence Number = 50 Time = 15:20:05 FA = 134.154.190.157/13001 Accepted

Sequence Number = 51 Time = 15:20:06 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:20:07 New care-of address = 134.143.190.157/13000

Sequence Number = 52 Time = 15:20:07 FA = 134.154.190.157/13000 Accepted

Sequence Number = 53 Time = 15:20:08 FA = 134.154.190.157/13000 Accepted

Sequence Number = 54 Time = 15:20:09 FA = 134.154.190.157/13000 Accepted

Sequence Number = 55 Time = 15:20:10 FA = 134.154.190.157/13000 Accepted

Sequence Number = 56 Time = 15:20:11 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:20:12 New care-of address = 134.143.190.157/13001

Sequence Number = 57 Time = 15:20:12 FA = 134.154.190.157/13001 Accepted

Sequence Number = 58 Time = 15:20:13 FA = 134.154.190.157/13001 Accepted

Sequence Number = 59 Time = 15:20:14 FA = 134.154.190.157/13001 Accepted

Sequence Number = 60 Time = 15:20:15 FA = 134.154.190.157/13001 Accepted

Sequence Number = 61 Time = 15:20:16 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:20:17 New care-of address = 134.143.190.157/13000

Sequence Number = 62 Time = 15:20:17 FA = 134.154.190.157/13000 Accepted

Sequence Number = 63 Time = 15:20:18 FA = 134.154.190.157/13000 Accepted

Sequence Number = 64 Time = 15:20:19 FA = 134.154.190.157/13000 Accepted

Sequence Number = 65 Time = 15:20:20 FA = 134.154.190.157/13000 Accepted

Sequence Number = 66 Time = 15:20:21 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:20:22 New care-of address = 134.143.190.157/13001

Sequence Number = 67 Time = 15:20:22 FA = 134.154.190.157/13001 Accepted

Sequence Number = 68 Time = 15:20:23 FA = 134.154.190.157/13001 Accepted

Sequence Number = 69 Time = 15:20:24 FA = 134.154.190.157/13001 Accepted

Sequence Number = 70 Time = 15:20:25 FA = 134.154.190.157/13001 Accepted

Sequence Number = 71 Time = 15:20:26 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:20:27 New care-of address = 134.143.190.157/13000

Sequence Number = 72 Time = 15:20:27 FA = 134.154.190.157/13000 Accepted

Sequence Number = 73 Time = 15:20:28 FA = 134.154.190.157/13000 Accepted

Sequence Number = 74 Time = 15:20:29 FA = 134.154.190.157/13000 Accepted

Sequence Number = 75 Time = 15:20:30 FA = 134.154.190.157/13000 Accepted

Sequence Number = 76 Time = 15:20:31 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:20:32 New care-of address = 134.143.190.157/13001

Sequence Number = 77 Time = 15:20:32 FA = 134.154.190.157/13001 Accepted

Sequence Number = 78 Time = 15:20:33 FA = 134.154.190.157/13001 Accepted

Sequence Number = 79 Time = 15:20:34 FA = 134.154.190.157/13001 Accepted

Sequence Number = 80 Time = 15:20:35 FA = 134.154.190.157/13001 Accepted

Sequence Number = 81 Time = 15:20:36 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:20:37 New care-of address = 134.143.190.157/13000

Sequence Number = 82 Time = 15:20:37 FA = 134.154.190.157/13000 Accepted

Sequence Number = 83 Time = 15:20:38 FA = 134.154.190.157/13000 Accepted

Sequence Number = 84 Time = 15:20:39 FA = 134.154.190.157/13000 Accepted

Sequence Number = 85 Time = 15:20:40 FA = 134.154.190.157/13000 Accepted

Sequence Number = 86 Time = 15:20:41 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:20:42 New care-of address = 134.143.190.157/13001

Sequence Number = 87 Time = 15:20:42 FA = 134.154.190.157/13001 Accepted

Sequence Number = 88 Time = 15:20:43 FA = 134.154.190.157/13001 Accepted

Sequence Number = 89 Time = 15:20:44 FA = 134.154.190.157/13001 Accepted

Sequence Number = 90 Time = 15:20:45 FA = 134.154.190.157/13001 Accepted

Sequence Number = 91 Time = 15:20:46 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:20:47 New care-of address = 134.143.190.157/13000

Sequence Number = 92 Time = 15:20:47 FA = 134.154.190.157/13000 Accepted

Sequence Number = 93 Time = 15:20:48 FA = 134.154.190.157/13000 Accepted

Sequence Number = 94 Time = 15:20:50 FA = 134.154.190.157/13000 Accepted

Sequence Number = 95 Time = 15:20:51 FA = 134.154.190.157/13000 Accepted

Registration sent. Time = 15:20:52 New care-of address = 134.143.190.157/13001

Sequence Number = 96 Time = 15:20:52 FA = 134.154.190.157/13000 Rejected

Sequence Number = 97 Time = 15:20:52 FA = 134.154.190.157/13001 Accepted

Sequence Number = 98 Time = 15:20:53 FA = 134.154.190.157/13001 Accepted

Sequence Number = 99 Time = 15:20:54 FA = 134.154.190.157/13001 Accepted

Sequence Number = 100 Time = 15:20:56 FA = 134.154.190.157/13001 Accepted

Registration sent. Time = 15:20:57 New care-of address = 134.143.190.157/13000

Sequence Number = 101 Time = 15:20:57 FA = 134.154.190.157/13001 Rejected

Sequence Number = 102 Time = 15:20:58 FA = 134.154.190.157/13000 Accepted

Sequence Number = 103 Time = 15:20:59 FA = 134.154.190.157/13000 Accepted

Sequence Number = 104 Time = 15:21:00 FA = 134.154.190.157/13000 Accepted

Sequence Number = 105 Time = 15:21:01 FA = 134.154.190.157/13000 Accepted

100 Second Completed..Terminating the Program..

\_]0;qd6395@algebra:~/p3\_[qd6395@algebra p3]$ exit

exit

Script done on Wed 30 Nov 2016 03:21:29 PM PST

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**Details of the Server name, port number and syntax**

I opened five different terminals. 1 for trig, 1 for geometry and 3 for algebra. Foreign agent and mobile node are run on the same server. I created all typescripts file with diff. name by using script command.

ds: data source, ha: home agent, fa: foreign agent, mn: mobile node

|  |  |
| --- | --- |
| **Data\_Source** |  |
| Server Name | trig.sci.csueastbay.edu |
| IP Address | 134.154.190.155 |
| Syntax | ./ds home\_agent\_address mobile\_node\_port\_no |
|  |  |
| **Home\_Agent** |  |
| Server Name | geometry.sci.csueastbay.edu |
| IP Address | 134.154.190.160 |
| Listening Port | 14000 |
| Syntax | ./ha care\_of\_ip\_address mobile\_node\_port\_no |
|  |  |
| **Foreign\_Agent 1** |  |
| Server Name | algebra.sci.csueastbay.edu |
| IP Address | 134.154.190.157 |
| Listening Port | 13000 |
| Syntax | ./fa foreign\_agent\_care\_of\_port\_no mobile\_node\_ip\_address mobile\_node\_port\_no |
|  |  |
| **Foreign\_Agent 2** |  |
| Server Name | algebra.sci.csueastbay.edu |
| IP Address | 134.154.190.157 |
| Listening Port | 13001 |
| Syntax | ./fa foreign\_agent\_care\_of\_port\_no mobile\_node\_ip\_address mobile\_node\_port\_no |
|  |  |
| **Mobile\_Node** |  |
| Server Name | algebra.sci.csueastbay.edu |
| IP Address | 134.154.190.157 |
| Listening Port | 14000 |
| Syntax | ./mn mobile\_node\_port\_no home\_agent\_ip\_address foreign\_agent\_ip\_address foreign\_agent\_base\_port\_no no\_of\_foreign\_agents |

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