These are the instructions for how a Bundling agent was setup to support the DTN testing with the Surrey Satellite Technology Limited (SSTL) United Kingdom Disaster Monitoring Constellation (MDC) satellite (UK-DMC). The DTN code is an older modified version of DTN2 and is not compatible with the more current versions of DTN2 (Version 6) as some header fields were change from fixed length to Self-Delimiting Numeric Values (SDNV). Since it is an older application some older versions of support files also need to be installed. These instructions assumes that the user has some knowledge of a linux OS and will be able to use commands such as “chmod”, “chown”, “su”, etc... and recognized when they are needed.

Note: For testing with the UK-DMC, the bundling-agent needs to reside on the inside interface (192.168.1.0/24) of the Ground Station Network (GSN) router and NATed via the GSN router for outside access.

1) Install Fedora Core 7 (FC7)

copy and install "F-7-i386-DVD.iso" image from:
http://archive.fedoraproject.org/pub/archive/fedora/linux/releases/7/Fedora/i386/iso/

Note: Choose the "Software Development" option. This will provide the development tools needed to compile the DTN code.

DO NOT enable NTP!

Create user account "username" (i.e.”joesmith”)

Assign IP address: 192.168.1.207/24.

Add the bundling destination to /etc/hosts. To use the NASA DTNbone machine as the final bundle destination use “192.55.90.165 bundling1”. Note, the DTN bundle destination hostname is hard coded in the UK-DMC flight code as “bundling1”. Thus, you have to use bundling1 and the final destination. You can use your own machine a the bundle combining node but that machine hostname has to be bundling1. The appropriate DTN routes will have to be set throughout your DTN network to ensure connectivity between the Ground Station DTN node to the DTN destination node.

Run software updates.

Run “yum install tcl-devel”

2) Download and install Berkeley DB 4.4.20.tar.gz

http://www.oracle.com/technology/software/products/berkeley-db/db/index.html

Extract db-4.4.20.tar.gz in the "username" directory.

Note: you need to be in "super user" mode to complete the following steps:

To do a standard UNIX build of Berkeley DB, change to the build_unix directory (/home/username/db-4.4.20/build_unix) and then enter the following two commands:

```
../dist/configure
make
```

This will build the Berkeley DB library.

To install the Berkeley DB library, enter the following command:

```
make install
```

From /lib directory add libdb-4.4.so link to the for the Berkley DB version 4.4.

"ln -s /usr/local/BerkeleyDB.4.4/lib/libdb-4.4.so"

3) copy and compile DTN2-GRC application.

Copy and untar DTN2-grc.tar file to "username" directory.
"tar -xvf DTN2-grc.tar"

Change to DTN2-grc directory.
"cd /home/username/DTN2-grc"

Compile/install DTN.
"./configure -C"
"make"
"make install"

Create directory /home/username/dtn2.
"mkdir dtn2"

Copy "dtn2.conf" (located on the server) to the /home/username/dtn2 directory.

Change to the /home/username directory and copy the following 4 files from the server.
"dtnping"
"dtnping_Bundle-Master"
"run_dtn2.sh"
"saratoga_client.pl"

Initialize the Database.
"./DTN2-grc/daemon/dtnd -c dtn2/dtn.conf --init-db"

IF Initializing the Database fails (this is common) type the following commands.
"cd /home/username/DTN2-grc"
"make distclean"
"./configure -C"
"make"

Then Initialize the Database.
"./DTN2-grc/daemon/dtnd -c dtn2/dtn.conf --init-db"

At this point, the DTN2-grc application should be installed, but the dtn.conf file will need to be configured. If any help is needed please contact dstewart@grc.nasa.gov.cd