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# GRF 1.4.6.4

## Directed Partial Release

April 20, 1998

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This release note describes the 1.4.6.4 site file patch release for 1.4.6 GRF software.

- 1.4.1	GRF 1600 beta release	September 15, 1997
- 1.4.2	Limited release	October 23, 1997
- 1.4.3	General release	November 17, 1997
- 1.4.6	General release	January 30, 1998

The 1.4.6.4 patch can only be applied to GRF 1.4.6 software. Special scripts included in this release update your system's software to 1.4.6.4. For example, if your system is currently running a version of 1.2.17 or 1.4.3 software, the script first updates your system to the 1.4.6 base and then applies the 1.4.6.4 patch.

Software release 1.4 supports the GRF 400 and GRF 1600 as well as systems configured with RMS nodes. Software release 1.4 does not support the first versions (v1) of the ATM OC-3 or FDDI media cards. These cards are informally called ATM Classic or FDDI Classic. Only the hardware-enhanced versions of these cards, ATM/Q and FDDI/Q, will continue to be supported.

Note that SP Switch Router orders have always been filled with ATM/Q and FDDI/Q media cards.

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## Patch description

This patch consists of the GRF and GR-II update scripts that install code modifications for TR 2828 (patch for directed broadcast packets) and the 1.4.6.3 code modifications described in TRs 3171, 3172, and 3173.

- TR 2828 - Directed broadcast packets not forwarded.  
A problem has been fixed in which GRF media cards did not correctly respond to and did not forward directed broadcast packets destined for networks to which the GRF was directly connected. All media cards supported in 1.4 now forward broadcast packets correctly.

This problem only applied to broadcasts to directly-connected networks. If there was another hop to the broadcast target, then the GRF forwarded that packet correctly.

In addition, the ability to enable or disable directed broadcast was implemented. The 1.2.17.ibm directed broadcast patch release did not allow directed broadcast to be configured

and in that release it was always enabled. In this patch release, directed broadcast is disabled by default, but can be enabled as required.

- TR 3171 - Heavy load from switch causes ATM/Q packet corruption and card reboot.  
A problem has been fixed in which the ATM/Q transmit side malfunctioned when its peak packet rate was exceeded. The card would not recognize when it was out of switch buffers and would behave unpredictably. The card now detects the situation and recovers cleanly.
- TR 3172 - Heavy load from switch causes FDDI/Q packet corruption and card reboot.  
A problem has been fixed in which the FDDI/Q transmit side malfunctioned when its peak packet rate was exceeded. The card would not recognize when it was out of switch buffers and would behave unpredictably. The card now detects the situation and recovers cleanly.
- TR 3173 - Heavy load from switch causes HIPPI packet corruption and card reboot.  
A problem has been fixed in which the HIPPI transmit side malfunctioned when its peak packet rate was exceeded. The card would not recognize when it was out of switch buffers and would behave unpredictably. The card now detects the situation and recovers cleanly.

## Downloading this patch release

Obtain the release files from the IBM FTP server:

```
service2.boulder.ibm.com
```

You are prompted for the SP Switch Router customer ID and password when you ftp to this server.

This patch release consists of update scripts and release note (RN) files:

- grf\_update
- gr2\_update
- RN1\_4\_6\_4.pdf
- RN1\_4\_6\_4.txt

## Disk space requirements

GRF: approximately 30MB of disk space in /flash is required.

GR-II: approximately 30MB of disk space in /usr is required.

## File descriptions

- grf\_update

This is the GRF version of the update script. It does everything needed to perform the upgrade to the router. This one-time only script is intended solely to upgrade the router from its current software to the 1.4.6 base with the 1.4.6.4 patch.

- gr2\_update

This is the GR-II version of the update script, and must be run only on GR-II systems. It does everything needed to perform the upgrade to the router. This one-time only script is intended solely to upgrade the router from its current software to the 1.4.6 base with the 1.4.6.4 patch.

- RN1\_4\_6\_4.pdf

This file contains the 1.4.6.4 Release Notes in PDF format.

- RN1\_4\_6\_4.txt

This file contains the 1.4.6.4 Release Notes in plain text format.

## Advisories

### - Upgrade advisories

GRF software releases have naming conventions that use either underbars (`A_1_4_6_ibm`) or periods (`1.4.6.ibm`). The update scripts load the `1.4.6.ibm` version of software to upgrade a router from pre-1.4.6 installations AND to upgrade `A_1_4_6_ibm` or other underbar-named versions. The prior releases are not written over, and remain in their present location.

Note that the `/etc` directory is not overwritten by either update script. The scripts do add entries to the `/etc/rc.local` file just prior to the “`exit 0`” line.

GRF 400 and GRF 1600 routers running a site-specific release version prior to upgrading (such as `1.4.6,boston`), will be upgraded to release version `1.4.6.ibm,default`.

If you are running the 1.4.6 software (period version), and you have used `grsite` to make changes to your site file, `1.4.6.ibm,default.site.TAR.gz`, your changes are not affected by the install script. Changes to all other site files are not incorporated by the update scripts.

### - ARP entries not written to ATM cards on reboot

On reboot or power up, ARP entries in `/etc/grarp.conf` are not being written to ATM OC-3c (ATM/Q) media cards.

If you reset the ATM/Q card using `grreset` or run the `grarp -f /etc/grarp.conf` command, the ARP addresses are installed on the appropriate media card. The `grarp -f filename` command only returns output when encounters an error processing an ARP entry.

### - Advisory: no fragmentation of directed broadcast packets

GRF media cards do not fragment directed broadcast packets. Therefore, the SP Switch Router Adapter card will not fragment directed broadcast packets it forwards to the Ethernet media card. Such packets must be less than the Ethernet MTU, 1500 bytes, in size. Fragmentation of IP packets is performed correctly.

### - Use binary format to ftp release files

You must transfer system images in binary mode when using ftp to get a new release. The system cannot boot if a newly-installed system image is transferred in ASCII format.

### - File name advisory

Various Ascend OS utilities used in managing GRF software releases and configuration files do not support file names with spaces. Use the underbar character (`_`) to separate words in a file name.

### - Advisory:

The `maint 42` command used to dump the media card route table is no longer available on any media card. Use the `grrt -S -p<slot>` command to obtain the same information.

### - Advisory:

AAL 3/4 is not supported on the ATM media card. The GRF supports only AAL 5 on ATM.

## Sample execution of grf\_update script

Here is a sample transcript of a session in which the **grf\_update** script first upgrades a GRF 1600 system (testbox.site.com) that is currently running A\_1\_4\_6,boston to 1.4.6.ibm,default, and then installs the 1.4.6.ibm patch release file on the system.

```
# grf_update

IBM GRF upgrade: testbox.site.com - Thu Apr 16 09:28:14 CDT 1998

This script will upgrade the router system software to
release 1.4.6.ibm and/or install the 1.4.6.4 directed
partial release patch file on testbox.site.com.

This script REQUIRES:
- Ftp access to service2.boulder.ibm.com from testbox.site.com.
- Approximately 30MB of disk space in /flash.

Please be aware:
- testbox.site.com will be REBOOTED if any system software
  and/or patch file is installed.

Please take a moment to ensure that the requirement(s)
are met and that testbox.site.com can be rebooted at this time.

Continue with upgrade? (y/n): y

Release: currently running A_1_4_6,boston. Upgrade needed to
1.4.6.ibm,default
Checking for 1.4.6.ibm system release files.
testbox.site.com will be upgraded using files from
service2.boulder.ibm.com.
Loading 1.4.6.ibm release files.
Connected to service2.boulder.ibm.com.
get 1.4.6.ibm.TAR.gz
local: 1.4.6.ibm.TAR.gz remote: 1.4.6.ibm.TAR.gz
226 Transfer complete.
get 1.4.6.ibm.root.gz
local: 1.4.6.ibm.root.gz remote: 1.4.6.ibm.root.gz
226 Transfer complete.
get Addendum.pdf
local: Addendum.pdf remote: Addendum.pdf
226 Transfer complete.
get RN1_4_6.pdf
local: RN1_4_6.pdf remote: RN1_4_6.pdf
226 Transfer complete.
Performing grwrite. Please wait.
Performing grfins. Please wait.
Device /dev/wd0a mounted on /flash.
Device /dev/wd0a unmounted.
The next release version after rebooting will be: 1.4.6.ibm,default

Patch File: currently running 1.4.6. Need 1.4.6.4 Patch File.
Loading 1.4.6.ibm patch release file.
Connected to service2.boulder.ibm.com.
get 1.4.6.ibm,default.site.TAR.gz 1.4.6.ibm,default.site.TAR.gz
local: 1.4.6.ibm,default.site.TAR.gz remote:
1.4.6.ibm,default.site.TAR.gz
```

```
226 Transfer complete.
get RN1_4_6_4.pdf
local: RN1_4_6_4.pdf remote: RN1_4_6_4.pdf
226 Transfer complete.
Loading 1.4.6.4 bsd kernel from 1.4.6.ibm,default.site.TAR.gz.bsd
tar: ustar vol 1, 20 files, 3645440 bytes read.

Directed Broadcast: already enabled. No need to modify
/flash/etc.1.4.6.ibm,default/rc.local.
The directed bcast will be enabled after the GRF reboots.
To temporarily disable the directed bcast setting later on, use:
# sysctl -w net.inet.ip.fwdirbcast=0
To verify that the bcast setting is one of the sysctl executables, use:
# sysctl net.inet.ip.fwdirbcast

IBM GRF upgrade: testbox.site.com is up-to-date
testbox.site.com will be upgraded to:
Next      Revision: 1.4.6.ibm  Version: default
Patch     Revision: 1.4.6.4.ibm
WARNING: testbox.site.com will now be REBOOTED to complete the upgrade.
 10  9  8  7  6  5  4  3  2  1
Continuing ...
Shutdown NOW!
shutdown: [pid 5524]

*** FINAL System shutdown message from netstar@testbox.site.com ***
System going down IMMEDIATELY

System shutdown time has arrived
Connection closed by foreign host.
```

## Upgrading system software - GRF systems

1. Log on as root and start the UNIX shell:

```
super> sh
#
```

2. Change directory:

```
# cd /usr/nbin
```

Then, ftp to the IBM server:

```
# ftp service2.boulder.ibm.com
ftp>
```

Enter the SP Switch Router customer ID and password as requested.

3. Now change to the /releases directory:

```
ftp> cd releases
ftp> cd A1_4_6
ftp> cd patches
ftp> cd A1_4_6_4
```

4. Set the file format and download the files:

```
ftp> bin
ftp> get grf_update
ftp> get RN1_4_6_4.pdf
ftp> get RN1_4_6_4.txt
```

```
ftp> quit
#
```

5. Change the script permissions:

```
# chmod 755 grf_update
```

6. Install the script:

```
# grsite --perm grf_update
```

7. Run the script:

```
# ./grf_update
```

8. To verify the installation, use this command to check that the directed broadcast setting is now one of the **sysctl** executables:

```
# sysctl net.inet.ip.fwdirbcast

net.inet.ip.fwdirbcast = 1
```

## Upgrading system software - GR-II systems

1. Log on as root and start the UNIX shell:

```
super> sh
#
```

2. Change directory:

```
# cd /usr/sbin
```

Then, ftp to the IBM server:

```
# ftp service2.boulder.ibm.com
ftp>
```

Enter the SP Switch Router customer ID and password as requested.

3. Now change to the /releases directory:

```
ftp> cd releases
ftp> cd A1_4_6
ftp> cd patches
ftp> cd A1_4_6_4
```

4. Set the file format and download the files:

```
ftp> bin
ftp> get gr2_update
ftp> get RN1_4_6_4.pdf
ftp> get RN1_4_6_4.txt
```

```
ftp> quit
#
```

5. Change the script permissions:

```
# chmod 755 gr2_update
```

6. Run the script:

```
# ./gr2_update
```

7. To verify the installation, use this command to check that the directed broadcast setting is now one of the **sysctl** executables:

```
# sysctl net.inet.ip.fwdirbcast
net.inet.ip.fwdirbcast = 1
```