



# Monitoring Network Services with Linux

SHARE 106  
Session 9270  
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# Agenda

- Why monitor the network?
- Hobbit Network Monitor
- Hobbit concepts
- Installing and configuring Hobbit
- Extending Hobbit
- Hobbit operations



# Why monitor the network?

- Monitoring packages available for operating systems and sub-systems
  - CICS, VSE, VM, z/OS, Linux
  - Designed to monitor internals (tasks, jobs, file access, performance metrics)
- Networks are getting more complex
- Systems are very interconnected
- We rely much more on varying types of systems



# Why monitor the network?

- Many machines perform 'business critical' functions
- Network administrators need to know when these systems are down or running degraded
- Notification of administrators when a problem arises





# Hobbit Network Monitor



- Network services availability monitor
- Provides a web based status display
- Uses colored icons and backgrounds for easy problem spotting
- Can perform any number of tests on any number of hosts
- Reports test results as a state
  - Up, down, on, off, red, green
- Marginal state used for potential trouble
  - yellow

# Hobbit Network Monitor



- Network tests run every 5 minutes
- The web page updates are done every minute
- If a test fails, it is re-tested every minute for 30 minutes
  - Quicker indication that test results have returned to normal
  - Reduces the need to change the test time
- Linux/Unix client available as of release 4.1
  - Installed to run client side tests and report to Hobbit server

# Hobbit History

- Originally called 'bb-gen toolkit'
- Offered as an enhancement to Big Brother (<http://bb4.com>)
- Big Brother runs on various Unix systems
  - Implemented almost entirely as shell scripts
  - Easy to write and fairly universal, but not the best performance
  - Not an open source license
  - Development focused on commercial product
- bb-gen reimplemented the core of bb in C



# Hobbit History

- Development of the 'free' version of bb stagnated
- Henrik Stoerner evolved bb-gen into a stand-alone package
- Hobbit 4.0 was released on Mar 31, 2005
- Active development
  - 4.1.2 is current





# Hobbit features

- Developed to monitor thousands of hosts
  - Handles big or small networks with ease
- Text file configuration
  - Web based configuration is planned
- Notification feature
  - Email (including cell phone), SMS
  - Alerts can be acknowledged while a solution is in progress
- Extensible through external scripts or clients



# Hobbit features

- Common protocols are available for testing
  - FTP, Telnet, HTTP, DNS, LDAP, SMTP, etc
  - SSL testing of any supporting protocols
- Networked applications can be monitored
  - Connections are mimicked and typical responses watched



# Hobbit features

- “Green is good, Red is bad”
  - Simple web based front end
- Hosts can be grouped together
  - Based on logical or physical relationships
  - Groups can be in separate sections, web pages or both
- Tests for certain hosts can be on a separate page specifically suited to a NOC



# Hobbit features

- In addition to HTML...
  - PDAs can be used via WAP/WML
  - RSS Feeds can be set up
  - XML format is also available
- Integrated trend analysis via LARRD
  - Generates graphs
- Event history is available
  - Can be used for SLA reporting
- Hosts can be disabled for planned downtime





# Hobbit installation

- Fairly standard Linux application install
  - RPMs available for x86 architecture
  - Source RPMs available
  - Source also available via tarball
- Available from
  - <http://hobbitmon.sourceforge.net>
- If installing on x86, use the RPM
- For zSeries, install the source RPM
  - Or 'build your own'



# Hobbit installation

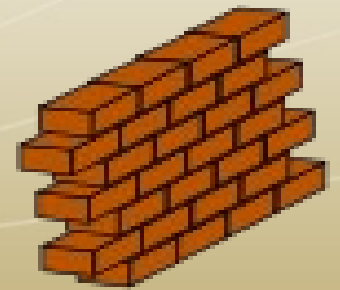


- Prerequisites
  - A Unix-like operating system
  - Apache webserver
  - Working compiler and GNU make
  - PCRE, RRDTOol, libpng and fping
    - Regular expression matching
    - Graphing
    - Fast connection test
  - For SSL support
    - Open SSL
  - For LDAP support
    - Open LDAP



# Hobbit installation

- Create a 'hobbit' user
- Use RPM or configure/make to build
- During the configuration, a number of questions are asked
  - The defaults are sensible
  - Only had to answer the location of fping, IP address prompts and group name for Apache
- Use make to build the package
- As root 'make install'



# Apache configuration

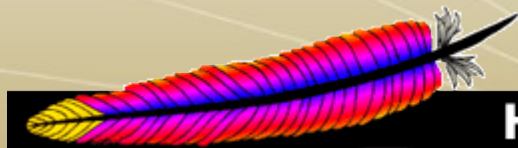
- An Apache configuration file is included with Hobbit
  - `~/server/etc/hobbit-apache.conf`
- Copy to `/etc/apache2/sysconfig.d`
- Edit `/etc/sysconfig/apache2`
  - Put the local hostname in `APACHE_SERVERNAME`
  - The path to the configuration file in `APACHE_CONF_INCLUDE_FILES`

```
APACHE_CONF_INCLUDE_FILES=/etc/apache2/sysconfig.d/hobbit-apache.conf
```



# Apache configuration

- Start Apache
  - `/etc/rc.d/apache2 start`
- Test access to webserver
- Set up Apache to start at boot
  - `chkconfig apache2 on`
  - YaST
- Use `htpasswd` to create users for access to secured Hobbit administration functions



**Apache**  
**HTTP SERVER PROJECT**

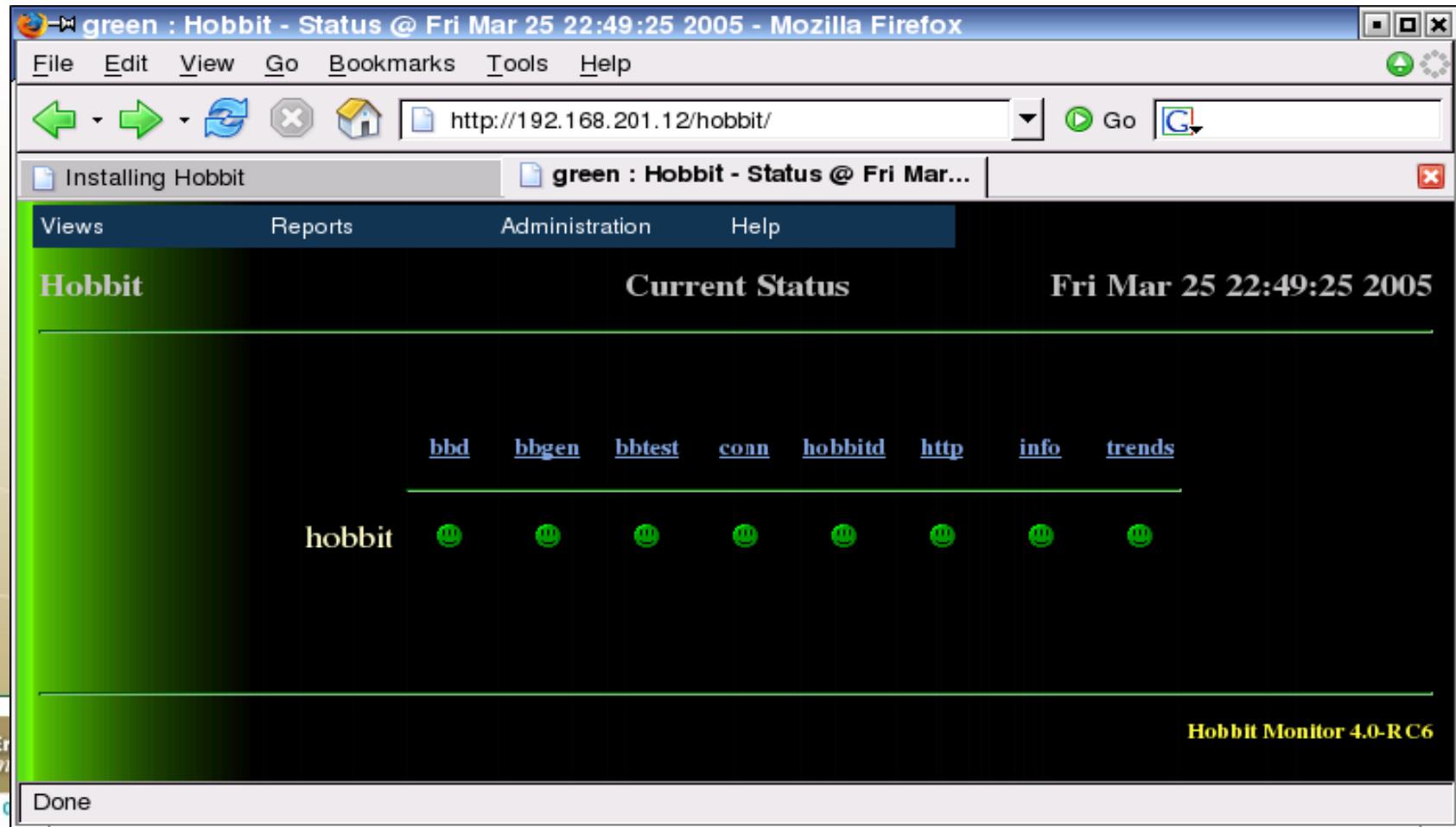
# Hobbit startup



- Sign on as 'hobbit' user
- Use the command
  - `./server/hobbit.sh start`
- The response should be 'Hobbit started'
  - A number of process will be running
  - An explanation of what they do is in the documentation
- After a few minutes use your web browser to navigate to your Hobbit server
  - <http://192.168.201.12/hobbit/>

# Hobbit web page

- Provides the status of the Hobbit server
- Clicking on an icon provides more information
- Including trending graphs



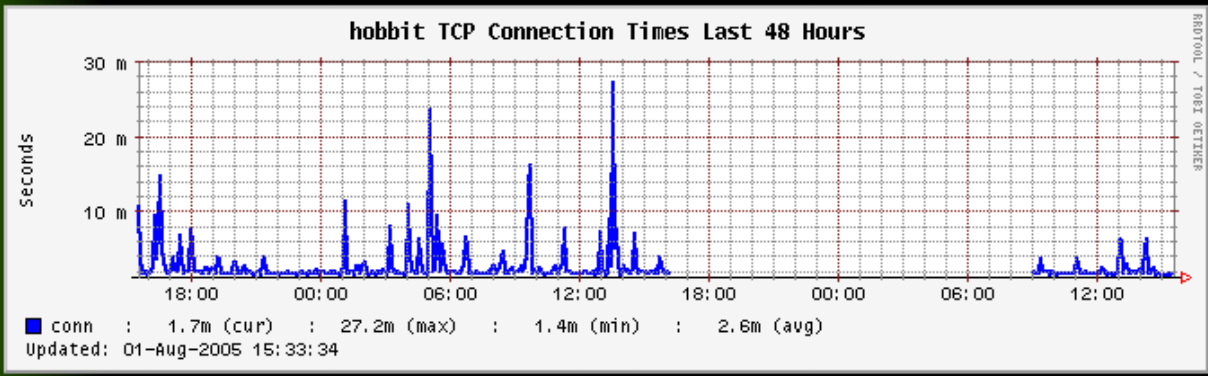
HISTORY

Mon Aug 1 15:32:59 2005 conn ok

Service conn on hobbit is OK (up)

◆ 192.168.201.12 is alive (1.75 ms)

Status unchanged in 50 days,3 hours, 24 minutes  
Status message received from 192.168.201.12





# Configuring Hobbit

- Configuration involves editing text files
  - Web based configuration is planned
- Host and test configuration is in `~/server/etc/bb-hosts`
- Changes automatically take affect during the next test cycle (every 5 minutes)



# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12  hobbit      # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8   conn2      # ftp dialup
192.168.201.9   db2b       # ftp NK:ftp
group VM/VSE systems
192.168.201.1   vm1        # ftp NK:conn,procs
192.168.201.2   vse1       # dialup
```



# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12 hobbit # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8 conn2 # ftp dialup
192.168.201.9 db2b # ftp NK:ftp
group VM/VSE systems
192.168.201.1 vm1 # ftp NK:conn,procs
192.168.201.2 vse1 # dialup
```

IP Address of a monitored host

# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12 hobbit # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8 conn2 # ftp dialup
192.168.201.9 db2b # ftp NK:ftp
group VM/VSE systems
192.168.201.1 vm1 # ftp NK:conn,procs
192.168.201.2 vse1 # dialup
```

Host name of a monitored host  
fully qualified or not



# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12  hobbit      # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8   conn2      # ftp dialup
192.168.201.9   db2b       # ftp NK:ftp
group VM/VSE systems
192.168.201.1   vm1       # ftp NK:conn,procs
192.168.201.2   vse1      # dialup
```

Directives used for Big Brother compatibility

# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12  hobbit      # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8   conn2      # ftp dialup
192.168.201.9   db2b       # ftp NK:ftp
group VM/VSE systems
192.168.201.1   vm1        # ftp NK:conn,procs
192.168.201.2   vse1       # dialup
```

Identifies this system as the hobbit server

# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12  hobbit      # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8   conn2      # ftp dialup
192.168.201.9   db2b       # ftp NK:ftp
group VM/VSE systems
192.168.201.1   vm1        # ftp NK:conn,procs
192.168.201.2   vse1       # dialup
```

Monitor Hobbit's own web site

# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12  hobbit      # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8   conn2      # ftp dialup
192.168.201.9   db2b       # ftp NK:ftp
group VM/VSE systems
192.168.201.1   vm1        # ftp NK:conn,procs
192.168.201.2   vse1       # dialup
```

Monitor ftp on conn2, db2b and vm1

# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12  hobbit      # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8   conn2      # ftp dialup
192.168.201.9   db2b      # ftp NK:ftp
group VM/VSE systems
192.168.201.1   vm1      # ftp NK:conn,procs
192.168.201.2   vse1     # dialup
```

Treat conn2 and vse1 as dialup links  
If they are unreachable, no notifications



# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12  hobbit      # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8   conn2      # ftp dialup
192.168.201.9   db2b       # ftp NK:ftp
group VM/VSE systems
192.168.201.1   vm1        # ftp NK:conn,procs
192.168.201.2   vse1      # dialup
```

Special directive for the NK View page

# Hobbit configuration file

```
group Hobbit Servers
192.168.201.12 hobbit # BBDISPLAY BBPAGER BBNET bbd http://hobbit/
group Linux for zSeries
192.168.201.8 conn2 # ftp dialup
192.168.201.9 db2b # ftp NK:ftp
group VM/VSE systems
192.168.201.1 vm1 # ftp NK:conn,procs
192.168.201.2 vse1 # dialup
```

Group the following hosts  
'Page' will create a separate web page

Hobbit Current Status Fri Apr 22 15:30:29 2005

Hobbit Servers

bbd bbgen bbtest conn hobbitd http info trends

hobbit [status icons]

Linux for zSeries

conn ftp info trends

conn2 db2b [status icons]

VM/VSE systems

conn cpu ftp getvis info paging pg\_util procs sp\_util trends

vm1 vse1 vse2 [status icons]

# Hobbit Client

- Reports status back to Hobbit server
- Can be installed on any Linux/Unix machine
- Build is much quicker than Hobbit server, but only one question
  - IP Address of Hobbit server
- Reports CPU Load, Disk Utilization, Memory Utilization and running processes
  - Log file monitoring is planned for an upcoming release
- Thresholds are configured on the server for any client
- Client code automatically installed on server

# Hobbit Client

- Client installed under a specific user: 'hobbit'
  - Just like the server
- Home directory is ~/client
- After installation no other client-side configuration needed
- Client startup is similar to server
  - ~/client/runclient.sh start
  - Same init script can be used (with the directory and script name changed)
- Client code runs 'top' to show top processes
  - This should be disabled on zSeries
  - In ~/client/bin/hobbitclient-linux.sh
  - Comment out lines related to top (an echo and top command)





Hobbit Servers [bbd](#) [bbgen](#) [bbtest](#) [conn](#) [cpu](#) [disk](#) [hobbitd](#) [http](#) [info](#) [memory](#) [msgs](#) [procs](#) [trends](#)

hobbit												
--------	--	--	--	--	--	--	--	--	--	--	--	--

Linux for zSeries [conn](#) [cpu](#) [disk](#) [ftp](#) [info](#) [memory](#) [msgs](#) [procs](#) [trends](#)

conn2									
db2b		-	-			-	-	-	

VM/VSE systems [cics](#) [conn](#) [cpu](#) [diskutil](#) [ftp](#) [getvis](#) [info](#) [paging](#) [pg\\_util](#) [procs](#) [sp\\_util](#) [trends](#)

vm1	-					-						
vse1	-		-	-	-	-		-	-	-	-	
vse2					-				-			

# Hobbit Client

- Configuration of client thresholds is based on a set of rules in `~/server/etc/hobbit-clients.cfg`
- UP: Defines uptime values, will show yellow if the machine came up within a time interval or is up too long
- LOAD: System load warning, will trigger color change when number of running processes hits a certain level
- DISK: Provides filesystem capacity check
- MEMPHYS, MEMACT, MEMSWAP: Memory utilization check

# Hobbit Client

- PROC: Running processes test, will alert when certain processes are not running, or not enough are running
- Rules are tied to a host or page with the HOST or PAGE directive. Hosts can be excluded with EXHOST
- Rules can be limited to a timeframe
- Good examples in file commentary

```
HOST=db2b  
DISK /opt 98 99
```

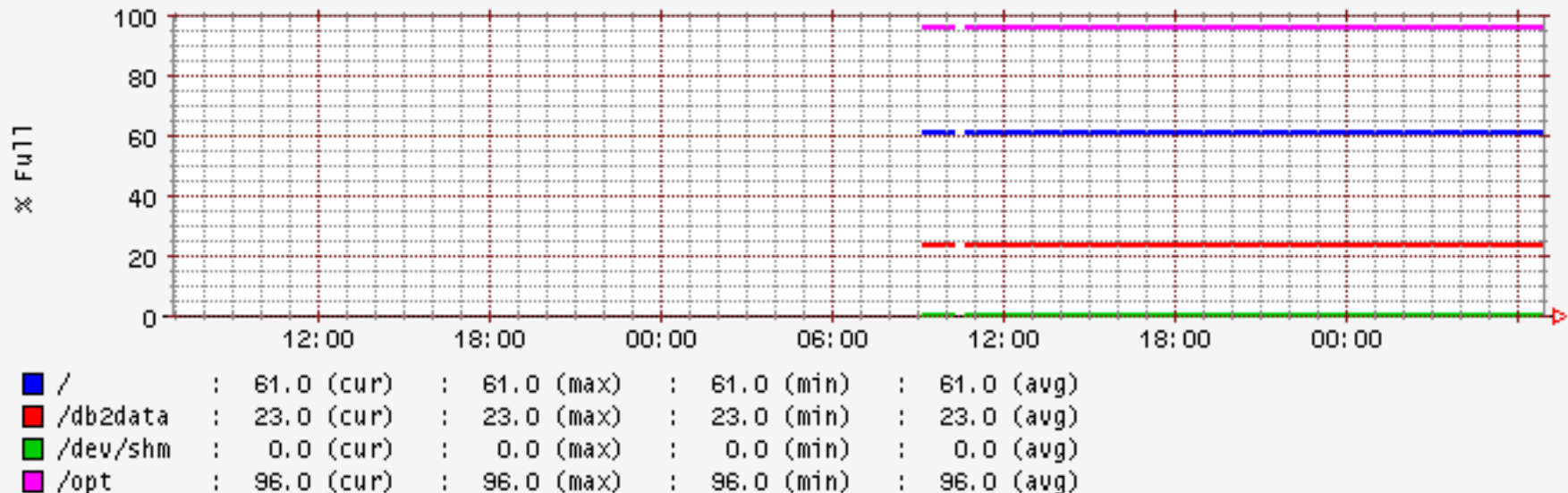
# HISTORY

Thu Aug 4 06:50:09 CDT 2005 - Filesystems OK

Filesystem	1024-blocks	Used	Available	Capacity	Mounted on
/dev/dasda1	787940	451668	296248	61%	/
/dev/dasdc1	418344	377752	19000	96%	/opt
/dev/dasdd1	139368	29756	102420	23%	/db2data
shmfs	46768	0	46768	0%	/dev/shm

Status unchanged in 21 hours, 37 minutes  
 Status message received from 192.168.201.9  
[Client data](#) available

db2b Disk Utilization Last 48 Hours



Updated: 04-Aug-2005 06:52:16

RR0700L / TOBI OETIKER

# Host or service failure

- Detected by Hobbit during it's network test cycle
- Turns the icon and web page background red
- Shows 'red' in the web page title bar
- Optionally notifies appropriate administrator via email or page



Hobbit Current Status Fri Apr 22 15:55:06 2005

Hobbit Servers bbd bbgen bbtest conn hobbitd http info trends

hobbit								
--------	--	--	--	--	--	--	--	--

Linux for zSeries conn ftp info trends

conn2				
db2b				

VM/VSE systems conn cpu ftp getvis info paging pg\_util procs sp\_util trends

vm1				-						
vse1		-	-	-		-	-	-	-	
vse2		-	-			-	-			

# Other views of network status

- Three different views
  - Main View
  - All non-green view
    - All systems that are currently not green
    - Shows last 6 hours or last 25 state transitions
  - NK view
    - Tests currently not green identified by NK tag




- Views
- Reports
- Administration
- Help
- Main view
- All non-green view
- NK view

**Current non-green Systems** Fri Apr 22 15:56:08 2005

[ftp](#) [info](#) [trends](#)

db2b   

4 events received in the past 34 minutes

Fri Apr 22 15:41:57 2005	db2b	ftp			
Fri Apr 22 15:36:54 2005	db2b	ftp			
Fri Apr 22 15:21:46 2005	db2b	ftp			
Fri Apr 22 15:21:46 2005	db2b	conn			

No events acknowledged in the last 240 minutes

All Monitored Systems OK

5 events received in the past 75 minutes

- Fri Apr 22 16:37:12 2005 db2b ftp (sad face) → (happy face)
- Fri Apr 22 15:41:57 2005 db2b ftp (neutral face) → (sad face)
- Fri Apr 22 15:36:54 2005 db2b ftp (happy face) → (neutral face)
- Fri Apr 22 15:21:46 2005 db2b ftp (neutral face) → (happy face)
- Fri Apr 22 15:21:46 2005 db2b conn (neutral face) → (happy face)

No events acknowledged in the last 240 minutes

- Main view
- All non-green view
- NK view**

# Current Critical Systems

Fri Apr 22 16:04:31 2005

[ftp](#) [info](#) [trends](#)

db2b   



# Host or service return

- When a host or service becomes available
  - Icons and page background turn green
  - An optional notification can be sent out
  - Non-green page shows the transition

# Extending Hobbit



- Hobbit provides a lot of information by itself
- Designed to retain compatibility with Big Brother
- Big Brother has a large number of 'add-on' packages and clients for other operating systems



# Extending Hobbit

- Big Brother extensions are available at <http://www.deadcat.net>
- Community contributions to extend/improve monitoring
- A large number of categories of packages
  - Backup, Clusters, Databases, LDAP, Windows, performance, processes, SNMP, disk, email, files, memory, RAID, power, security, routers, logging, NFS, skins

# Extending Hobbit

- The majority of these should be compatible with Hobbit
- Clients also available for other operating systems
  - OS/400
  - OS/390, z/OS
  - Netware
  - Alpha OpenVMS
  - z/VM
  - VSE/ESA, z/VSE

# Extending Hobbit

- z/VM client
  - Runs in a virtual machine
  - Written in REXX
  - Reports CPU Utilization, SFS Filepool Utilization, Paging, Page and Spool Utilization and running virtual machines
  - Configured via a file on the virtual machine
  - Thresholds can be set to change Hobbit color when a limit is exceeded
  - Available at [http://www.vmassist.com/rs\\_samples](http://www.vmassist.com/rs_samples)

VM/VSE systems	<u>conn</u>	<u>cpu</u>	<u>diskutil</u>	<u>ftp</u>	<u>info</u>	<u>paging</u>	<u>pg_util</u>	<u>procs</u>	<u>sp_util</u>	<u>trends</u>
vm1	◆	◆	◆	◆	⊗	◆	◆	◆	◆	⊗



# Extending Hobbit



- z/OS client
  - Runs as a started task
  - Written in REXX and assembler
  - Reports CPU Utilization, Spooling, Paging, running processes, disk volume utilization, storage
  - Available at <http://www.deadcat.net>



# Extending Hobbit

- VSE/ESA, z/VSE client
  - Executes as a long running job
  - Written in REXX and assembler
  - Monitors Partition Getvis, running processes (jobs), Spool Utilization and Disk Utilization (VTOCs, VSAM Catalogs and Libraries)
  - CPU Utilization and Paging in development
  - Available at [http://www.vmassist.com/rs\\_samples](http://www.vmassist.com/rs_samples)

VM/VSE systems	<u>conn</u>	<u>cpu</u>	<u>diskutil</u>	<u>ftp</u>	<u>getvis</u>	<u>info</u>	<u>paging</u>	<u>pg_util</u>	<u>procs</u>	<u>sp_util</u>	<u>trends</u>
vm1	◆	◆	◆	◆	-	😊	◆	◆	◆	◆	😊
vse1	🔲	-	-	-	-	😊	-	-	-	-	😊
vse2	◆	-	-	-	😊	😊	-	-	😊	😊	😊

# Extending Hobbit

- Hobbit provides a well defined interface for reporting status messages
  - The same interface Big Brother used
  - Status can be reported
    - Locally (on the Hobbit server) via a command
    - Via a socket connection over port 1984
- Open a socket to the Hobbit server
- Send a status message:

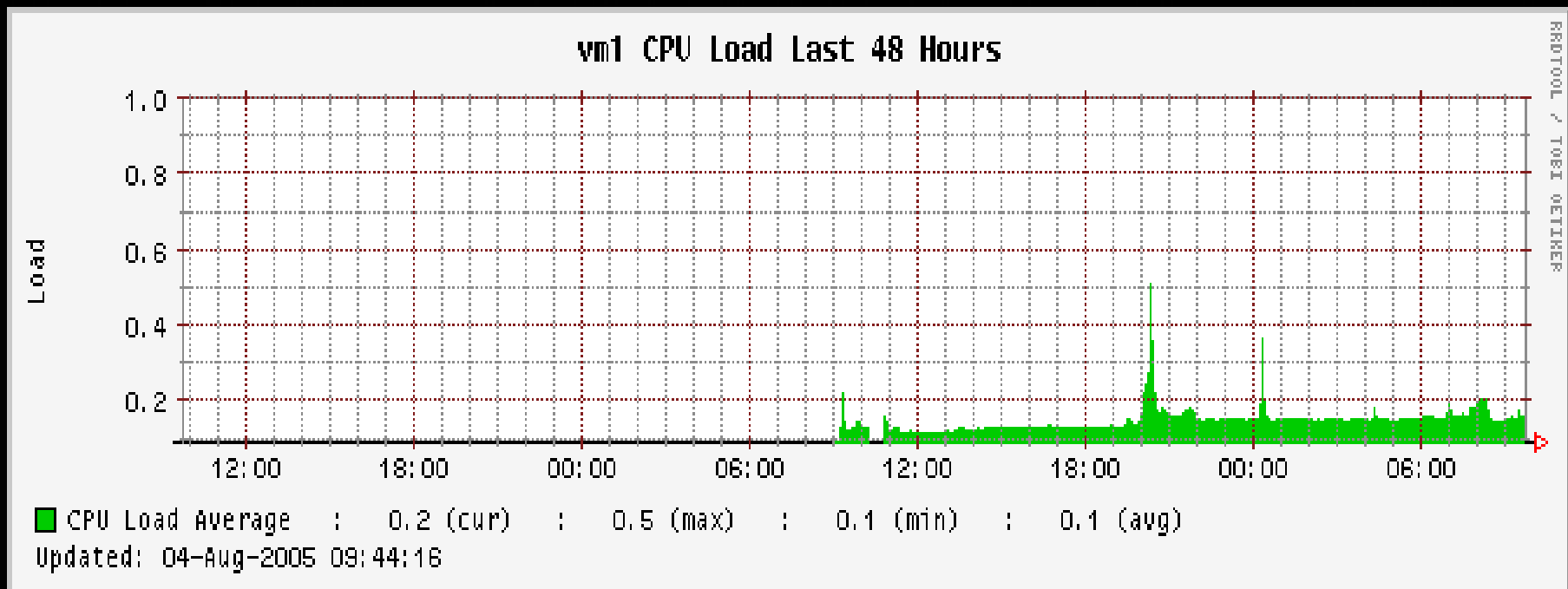
```
status vm1.cpu green 30 Mar 2005 08:20:06    CPU Utilization    25%  
z/VM Version 4, Release 4.0, service level 0402 (32-bit)  
AVGPROC-025% 01
```

# HISTORY

## 4 Aug 2005 09:40:30 CPU Utilization 16%

z/VM Version 4 Release 4.0, service level 0402 (32-bit)  
AVGPROC-016% 01

Status unchanged in 4 days,5 hours, 15 minutes  
Status message received from 192.168.201.1



# HISTORY

## 1 Aug 2005 13:01:45 SFS Pool Utilization OK

FILEPOOL: VMSYS

StorGrp	Total Blks	Free Blks	Pct Used
◆ 2	30022	28705	4.4%

FILEPOOL: VMSYSU

StorGrp	Total Blks	Free Blks	Pct Used
◆ 2	1070	939	12.2%
◆ 3	17974	17974	0.0%

Filespaces:

FSpace	Type	StorGrp	Max Blks	Commit Blks	Pct Used
◆ HOBBITVM	SFS	2	100	12	12.0%
◆ MAINT	SFS	2	7000	9	0.1%
◆ RKS1	SFS	2	1000	19	1.9%
◆ RKS2	SFS	3	200	0	0.0%
◆ SFPURGER	SFS	2	1000	81	8.1%
◆ TMP	BFS	2	1000	0	0.0%
◆ VAR	BFS	2	1000	0	0.0%
◆ WAKEUP	SFS	2	1000	10	1.0%

Status unchanged in 46 days,2 hours, 1 minutes

Status message received from 192.168.201.1



# When clients don't respond

- Hobbit expects clients to communicate at regular intervals
- Most default to the standard Hobbit interval of 5 minutes
- If a status report is not received after 30 minutes, Hobbit turns the client tests purple
- An optional notification can be sent out
- Green is restored when the client is restarted

Hobbit Current Status Thu Apr 28 16:38:07 2005

Hobbit Servers bbd bbgen bbtest conn hobbitd http info trends

hobbit	◆	◆	◆	◆	😊	◆	◆	◆
--------	---	---	---	---	---	---	---	---

Linux for zSeries conn ftp info trends

conn2	⊠	⊠	◆	◆
db2b	◆	◆	◆	◆

VM/VSE systems conn cpu ftp getvis info paging pg\_util procs sp\_util trends

vm1	◆	☹	◆	-	◆	☹	☹	☹	☹	◆
vse1	⊠	-	-	-	◆	-	-	-	-	◆
vse2	😊	-	-	😊	◆	-	-	😊	😊	◆

# Hobbit operations

- Starting and stopping
- Outage notification
- Alert Acknowledgment
- Enable/Disable
- Reporting

# Starting and stopping Hobbit

- The traditional Linux start/stop process can be used
- Script is not provided, easy to create
- Copy existing script (like cron) to hobbit
- Will appear in output of `chkconfig --list` so that startup can be turned on or off

# Starting and stopping Hobbit

```
#!/bin/sh
### BEGIN INIT INFO
# Provides:          hobbit
# Required-Start:    network
# Required-Stop:     network
# Default-Start:     3 5
# Default-Stop:      0 1 6
# Description:       Start the hobbit network monitor
### END INIT INFO

case "$1" in
  start)
    echo "Starting Hobbit"
    su - hobbit -c "cd /home/hobbit/server; ./hobbit.sh start"
    ;;
  stop)
    echo "Stopping Hobbit"
    su - hobbit -c "cd /home/hobbit/server; ./hobbit.sh stop"
    ;;
  restart)
    $0 stop
    $0 start
    ;;
  *)
    echo "Usage: $0 {start|stop|restart}"
    exit 1
    ;;
esac
```





# Outage Notification

- A page or email is sent out when a non-green condition occurs
- Most cell phones are email capable
- Very configurable and flexible
- Very good information in the docs
- Configuration data in  
~/server/etc/hobbit-alerts.cfg
- File contains rules about the host and service and who is notified

# Outage Notification

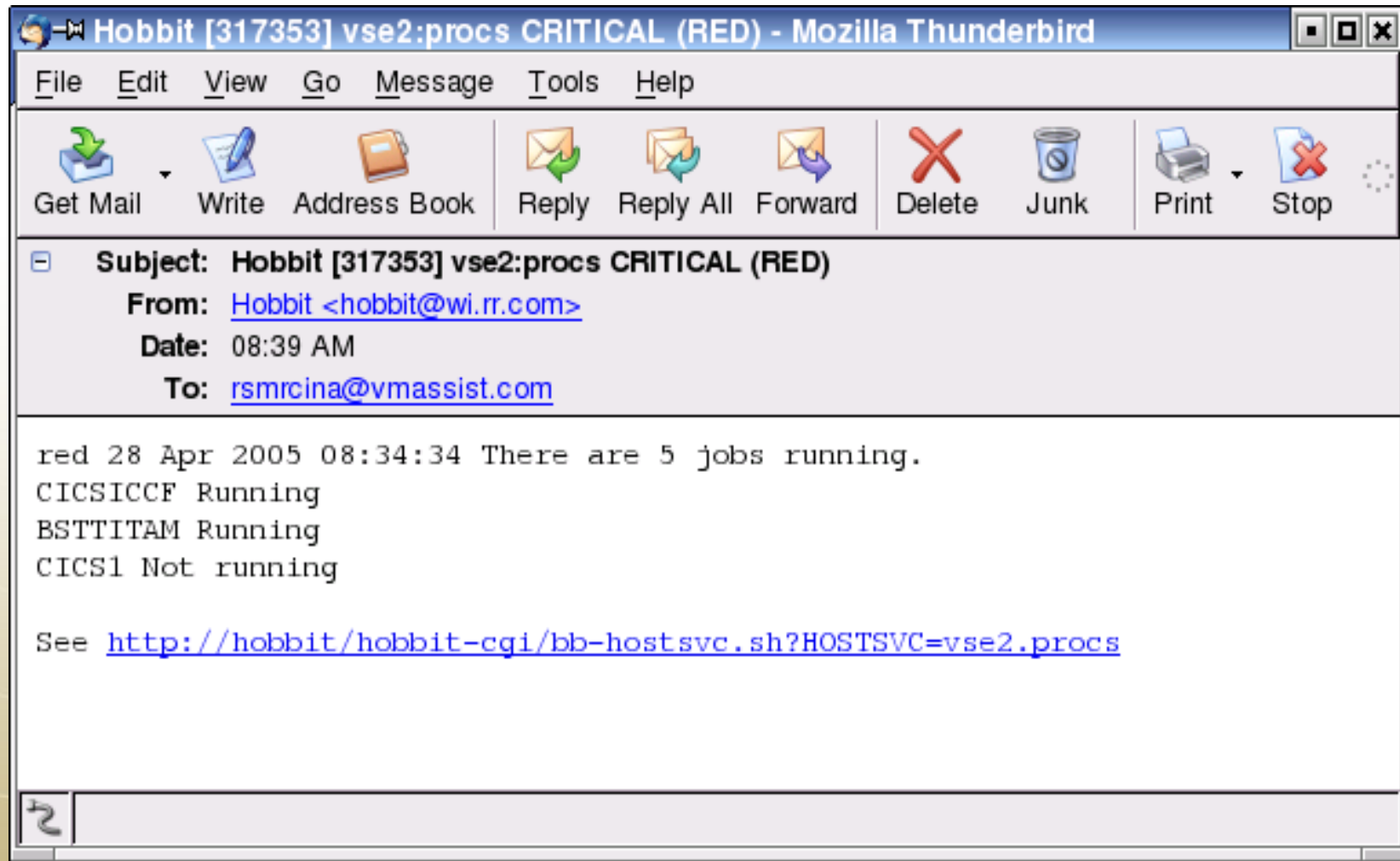
- Simple example

```
HOST=vse2
```

```
MAIL rsmrcina@vmassist.com
```

- Sends an email to [rsmrcina@vmassist.com](mailto:rsmrcina@vmassist.com) if any test related to vse2 fails

# Outage Notification



# Outage Notification

- **SERVICE** – notify for one or more services
  - SERVICE=conn,http,ftp
- **REPEAT** – repeat notification, default 30m
  - REPEAT=1h
- **TIME** – time range for notification
  - TIME=\*:0730:2100
- **COLOR** – only notify for certain color
  - COLOR=red

# Outage Notification

- DURATION – Only alert if outage is longer than time indicated
  - DURATION > 10m
  - DURATION < 2h
- RECOVERED – Sends alert when host/service returns
- SCRIPT – Used to code alternative alert mechanism, eg. SMS page



# Outage Notification

- Wildcards can be used in the hostname and service name
  - `HOST=%(www|intranet|support|mail).foo.com`
- To save typing, macros are supported
  - `$ZLINUX=%(conn2|db2b)` `$VSE=%(vse1|vse2)`
  - Anywhere a macro is used, it is replaced
  - Works with recipients also

# Outage Notification

- This notification configuration:

```
HOST=conn2,db2b
```

```
MAIL curly@vmassist.com
```

```
MAIL moe@vmassist.com
```

```
MAIL larry@vmassist.com
```

- Becomes:

```
$ZLINUX=%(conn|db2b)
```

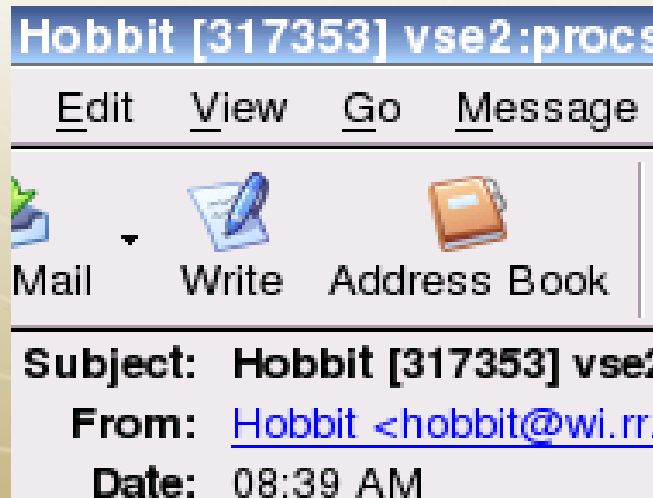
```
$ZSUPPORT=%(curly|moe|larry)@vmassist.com
```

```
HOST=$ZLINUX
```

```
MAIL $ZSUPPORT
```

# Alert Acknowledgment

- An administrator can acknowledge an alert
  - Stops notification
  - Changes web page
  - Visual cue that the issue is being resolved
- Each alert includes an acknowledgment code



# Alert Acknowledgment

- On 'Administration Menu' click Acknowledge Alert



A screenshot of a Mozilla Firefox browser window displaying the 'Hobbit - Acknowledge Alert' page. The browser's address bar shows the URL 'http://192.168.201.12/hobbit-seccgi/bb-ack.sh'. The page has a dark background with a red sidebar on the left containing the 'Hobbit' logo. A navigation menu at the top includes 'Views', 'Reports', 'Administration', and 'Help'. The 'Administration' menu is open, showing options: 'Find host', 'Acknowledge alert', and 'Enable/disable'. The main content area is titled 'Acknowledge Alert' and shows the date 'Thu Apr 28 11:04:12 2005'. It contains three input fields: 'Estimated time to resolve issue:' with a value of '60' and the unit 'minutes'; 'Explanation/Cause of problem:' with an empty text box; and 'Acknowledgment Code:' with an empty text box. A 'Send' button is located below the input fields. The footer of the page reads 'Hobbit Monitor 4.0' and the browser's status bar shows the URL 'http://192.168.201.12/hobbit-seccgi/null'.



# Alert Acknowledgment

- Enter duration of outage, explanation and acknowledgment code
- Hit Send
- Red icon turns to a check mark to indicate acknowledgment



VM/VSE systems	conn	cpu	ftp	getvis	info	paging	pg_util	procs	sp_util	trends
vm1	◆	◆	◆	-	◆	◆	◆	◆	◆	◆
vse1	⊗	-	-	-	◆	-	-	-	-	◆
vse2	✓	-	-	◆	◆	-	-	⊗	◆	◆

**Thu Apr 28 13:29:39 2005 conn NOT ok**

Service conn on vse2 is not OK : Host does not respond to ping

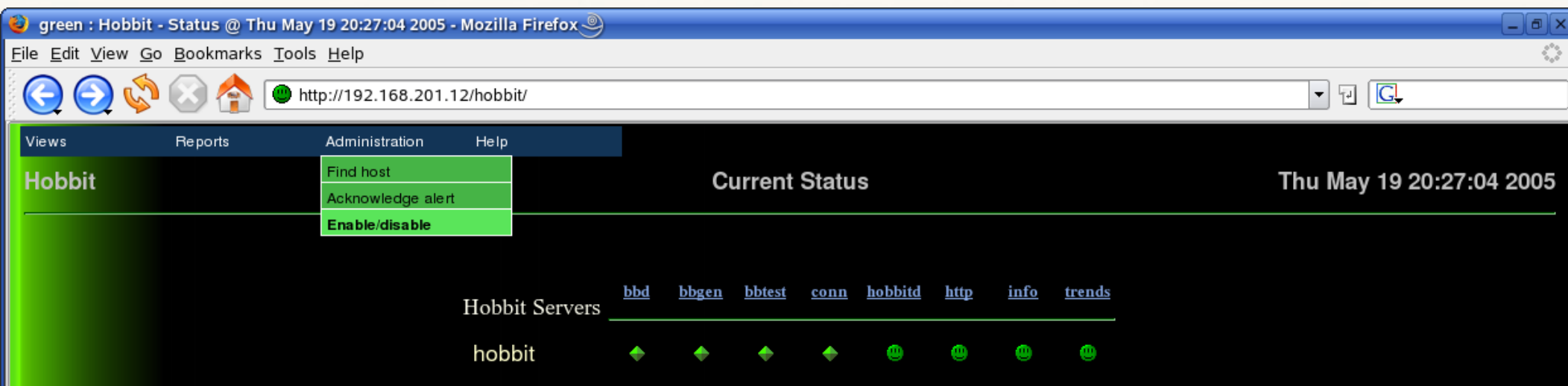
System unreachable for 3 poll periods (428 seconds)

⊗ 192.168.201.3 is unreachable

Status unchanged in 0 hours, 7 minutes  
 Status message received from 192.168.201.12  
 Current acknowledgment: System abend  
 Acked by: rks0 (192.168.1.101)  
 Next update at: 14:25 2005-04-28

# Enable/Disable

- Remove a host or service from testing cycle
- Use for planned outages
- Reinstate the host or service (explicitly or after 'down' time)



# Enable/Disable

- Select the host and test to disable
- Enter a reason and timeframe
- Indicate whether to disable now or schedule for another time
- Press disable button
- The 'Info' icon for any host also provides Enable/Disable
- Individual tests or ALL can be re-enabled



### Big Brother Disabling and Enabling

Refresh Display

#### Status

*No changes made*

Show Instructions

#### Currently Disabled Tests

*None*

#### Scheduled Disabled Tests ("at" queue on hobbit)

*None*

#### Hosts

- ALL
- conn2
- db2b
- hobbit
- vm1
- vse1
- vse2

#### Tests

- ALL
- conn
- ftp

Reason: Upgrade to z/VSE 3.1

Username: rks0 at 192.168.200.253

Duration: 4 hours

- Disable Now
- Schedule for Disable

Year: 2005 Month: 05 Day: 24 Hour: 08 Min: 00

Disable Reset

### Big Brother Disabling and Enabling

Refresh Display

**Status**

**Processing...**

Disabled [conn2.conn] on [192.168.201.12]  
 Disabled [conn2.ftp] on [192.168.201.12]

Show Instructions

#### Currently Disabled Tests

Enable?	Host	Test	Offline Until
<input type="checkbox"/>	conn2	<a href="#">conn</a>	
		<a href="#">ftp</a>	
<input type="checkbox"/>	<b>Re-enable</b>		
<input type="checkbox"/> Check All	<i>All tests for each selected host will be re-enabled</i>		

**Hosts**

- ALL
- conn2
- db2b
- hobbit
- vm1
- vse1
- vse2

**Tests**

Pick a host...

Reason:

Username: rks0 at 192.168.200.253

Duration: 4 hours

Disable Now

Schedule for Disable

Year: 2005 Month: 05 Day: 19 Hour: 20 Min: 57

**Disable** **Reset**

#### Scheduled Disabled Tests ("at" queue on hobbit)

None



Hobbit Current Status Thu Aug 04 19:38:36 2005

Hobbit Servers [bbd](#) [bbgen](#) [bbtest](#) [conn](#) [cpu](#) [disk](#) [hobbitd](#) [http](#) [info](#) [memory](#) [msgs](#) [procs](#) [trends](#)

hobbit													
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Linux for zSeries [conn](#) [cpu](#) [disk](#) [ftp](#) [info](#) [memory](#) [msgs](#) [procs](#) [trends](#)

conn2										
db2b										

VM/VSE systems [conn](#) [cpu](#) [diskutil](#) [ftp](#) [getvis](#) [info](#) [paging](#) [pg\\_util](#) [procs](#) [sp\\_util](#) [trends](#)

vm1					-						
vse1		-	-	-	-		-	-	-		
vse2		-	-	-			-	-			

# Hobbit reports



- Event Log report is similar to the non-green view
  - You can control how far back to go
  - You can control how many events to show



blue : Hobbit - Eventlog @ Thu Aug 04 19:43:23 2005 - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://192.168.201.12/hobbit-cgi/bb-eventlog.sh

Views **Reports** Administration Help

Hobbit **Eventlog** Thu Aug 04 19:43:23 2005

- Event log Report
- Availability Report
- Snapshot Report

How long to go back in time:  minutes

Max. number of events

Hobbit Monitor 4.1.1

green : Hobbit - Eventlog @ Wed Apr 27 11:08:07 2005 - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://192.168.201.12/hobbit-cgi/bb-eventlog.sh?MAXTIME=6000&MAXCOL

Views Reports **Administration** Help

Hobbit **Eventlog** Wed Apr 27 11:08:07 2005

23 events received in the past 5925 minutes

Wed Apr 27 10:09:05 2005	db2b	ftp			
Wed Apr 27 10:09:05 2005	db2b	conn			
Wed Apr 27 09:38:46 2005	hobbit	hobbitd			
Wed Apr 27 09:38:46 2005	vse2	getvis			
Wed Apr 27 09:38:46 2005	vse2	procs			
Wed Apr 27 09:38:46 2005	vse2	sp_util			
Wed Apr 27 09:33:43 2005	hobbit	hobbitd			
Wed Apr 27 09:30:55 2005	hobbit	http			

# Hobbit reports

- Availability report will show the percentage of time that each host and service is available
- Enter a date range and one of three options
  - Critical events (red)
  - Non-green events
  - All events

- Event log Report
- Availability Report
- Snapshot Report

### Hobbit Monitor Availability Report

April 17 2005 - to - April 23 2005 Display non-green events

Generate Report



**Hobbit** **Availability Report** **Apr 17 2005 - Apr 23 2005**

Hobbit Servers bbd bbgen bbtest conn hobbitd http

hobbit	◆	◆	◆	◆	◆	<b>99.98</b>
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Linux for zSeries conn ftp

conn2	◆	◆
db2b	<b>90.82</b>	<b>99.45</b>

VM/VSE systems conn cpu ftp getvis paging pg\_util procs sp\_util

vm1	◆	◆	◆	-	◆	◆	◆	◆
vse1	◆	-	-	-	-	-	-	-
vse2	◆	-	-	◆	-	-	<b>99.77</b>	◆

# Hobbit reports



- Snapshot report
  - A point in time display of how the Hobbit web page looked
  - Enter a date and time
  - Click 'Generate Report'





- Event log Report
- Availability Report
- Snapshot Report

Hobbit Snapshot Report

Generate Report

Hobbit Snapshot Report Wed Aug 03 06:00:00 2005

Hobbit Servers [bbd](#) [bbgen](#) [bbtest](#) [conn](#) [cpu](#) [disk](#) [hobbitd](#) [http](#) [memory](#) [msgs](#) [procs](#)

hobbit											
--------	--	--	--	--	--	--	--	--	--	--	--

Linux for zSeries [conn](#) [cpu](#) [disk](#) [ftp](#) [memory](#) [msgs](#) [procs](#)

conn2							
db2b							

VM/VSE systems [conn](#) [cpu](#) [diskutil](#) [ftp](#) [getvis](#) [paging](#) [pg\\_util](#) [procs](#) [sp\\_util](#)

vm1					-				
vse1		-	-	-	-	-	-	-	-
vse2		-	-	-		-	-		

# User comments



Ladies and Gentlemen of the list

I would like to take a moment to publicly thank Henrik for his time.

Not only did Henrik write an amazing tool, but he released it as open source, allowing all of us to benefit from his effort.

Henrik didn't ask for anything in return.

I work for a financial company. Their philosophy is, if it's free, it must be worth exactly what we paid for it.

I proved them wrong. I showed them Hobbit is fantastic application which has, in the past 3 months, proven itself over and over. But then at the end of last month, Hobbit had a serious problem. My colleagues laughed.

"You running open source. Let's see where you get your support from."

I mailed this list, and Henrik jumped into action.

We discussed it on the list for a while, then took it offline. Later, we were joined offline by Stefan Loos.

Henrik wrote new versions. Inserted more logging.

Analysed data we sent

him. Debugged his code. Wrote new versions again.

We did rebuilds, monitored problems, gathered logs, collected data, and made it all available to Henrik.

Eventually, Henrik mailed us a final new hobbitd.c and asked us to rebuild the application.

Touch wood, but so far (48 hours later) everything looks good. People, Henrik worked hard on this bug. 12 days, for no reward. He had no problem with his Hobbit, and no incentive to fix ours, except for a commitment to the open source community, and to us. We are not entitled to Henrik's software, bug fixes, support, time or advice. It is something Henrik gives us of his own free will, and for that I am most grateful.

Henrik, thank-you.





# User comments



I also work for a financial company and also was given looks of disapproval when I suggested and implemented Hobbit....but we also had similar results! So far we have had three vendors with their "Amazing fix-everything" products that cost hundreds of thousands of dollars, require dozens of servers, and an army of people to get them working. ALL of them have been shown the door! The bottom line is that Hobbit just plain works! ...and the support from Henrik and this message board has fixed any problem better and faster than any commercial support I have ever dealt with (try calling HP !! - you better have a lot of time and patience!)

Thanks Henrik!  
Kevin



# Wrapping up...

- Enterprise class monitoring solution
- Open Source
- Under heavy development, but feature rich
- Runs on Linux (including zSeries!)
- Can be well integrated into the zSeries environment
- Easy to install and configure
- Expandable, very useful and performs well

# Questions...



Rich Smrcina  
rsmrcina@vmassist.com

