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Red Hat Subscription Tools: Faster Issue Resolution & Continuous Uptime

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April 15, 2014



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Red Hat Subscription Tools: Faster Issue Resolution

Keith Robertson

Red Hat Access

What is Red Hat Access

- **Red Hat Access** – Automation enables quicker help, answers, and proactive services using exclusive Red Hat resources
 - **Red Hat Access: Search** - Access exclusive knowledge and solutions
 - **Red Hat Access: Support** - Create, manage, and update your support cases
 - **Red Hat Access: Diagnose** - Exclusive on-line diagnostic services to easily perform problem determination on error codes, stack-traces, and logs

Integrated Knowledge Access



Red Hat Access: RHEV and RHS-C

Integrated Knowledge Access

The screenshot shows the Red Hat Enterprise Virtualization (RHEV) web interface. The top navigation bar includes the Red Hat logo, the text "Red Hat Enterprise Virtualization", and a "Market Place" link. The user is logged in as "admin@internal" and can access "Configure", "Guide", "About", and "Sign Out" options. A search bar at the top contains the text "DataCenter:". Below the search bar is a horizontal menu with tabs for "Data Centers", "Clusters", "Hosts", "Networks", "Storage", "Disks", "Virtual Machines", "Pools", "Templates", "Volumes", "Users", "Log Viewer", and "Events". The "Data Centers" tab is selected, showing a table with columns: Name, Storage Type, Status, Compatibility Version, Description, and Comment. The table contains one entry: "Default" with Storage Type "NFS", Status "Uninitialized", Compatibility Version "3.3", and Description "The default Data Center". Below the table is a secondary navigation bar with tabs for "Storage", "Logical Networks", "Network QoS", "Clusters", "Permissions", "Red Hat Search", "Red Hat Documentation", and "Events". The "Red Hat Search" tab is selected, showing a search bar with the text "RHEV Networking Failure" and a search icon. To the right of the search bar is a text input field containing "rhn-support-sshmake". Below the search bar, the search results are displayed in two columns. The left column contains a list of search results, including "Why do I observe RHEV hosts becoming non-operational and data centers becoming non responsive on HP FlexFabric?", "Why does RHEV-M webadmin portal not report that password has expired to users attempting to login?", "Why does adding a host with an already configured bonding to a RHEV cluster with VLAN tagged logical networks fail?", "fence_ipmilan fails with 'Chassis power = Unknown' in RHEL 5 or 6 or RHEV", "fencing failure results in VM corruption", and "rx_crc_errors with Cisco VM-FEX in RHEV". The right column contains the details of the selected search result, "Why do I observe RHEV hosts becoming non-operational and data centers becoming non responsive on HP FlexFabric?". The details include the "Issue:" section, which lists two bullet points: "Hosts can not access storage domains and become Non-Operational:" and "Datacenters become non responsive due to RHEV-M failing to reach hosts over the network:". Below the bullet points is a code block containing the text: "Host <host> cannot access one of the Storage Domains attached to the Data Center <dc>. Setting Host s", "Invalid status on Data Center <dc>.", and "Setting Data Center status to Non Responsive (On host <host>, Error: Network error during communicati". At the bottom of the interface, there is a status bar showing "Last Message: 2014-Apr-07, 09:54" and "User admin@internal logged in.". On the right side of the status bar, there are links for "Alerts (2)", "Events", and "Tasks (0)".

Red Hat Enterprise Virtualization

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Market Place

Search: DataCenter:

Data Centers Clusters Hosts Networks Storage Disks Virtual Machines Pools Templates Volumes Users Log Viewer Events

System

Expand All Collapse All

System

Data Centers

Default

Storage

Networks

Templates

Clusters

External Providers

New Edit Remove Force Remove Guide Me Red Hat Access: Support

Name	Storage Type	Status	Compatibility Version	Description	Comment
Default	NFS	Uninitialized	3.3	The default Data Center	

Storage Logical Networks Network QoS Clusters Permissions Red Hat Search Red Hat Documentation Events

RHEV Networking Failure

rhn-support-sshmake

Why do I observe RHEV hosts becoming non-operational and data centers becoming non responsive on HP FlexFabric?

Why does RHEV-M webadmin portal not report that password has expired to users attempting to login?

Why does adding a host with an already configured bonding to a RHEV cluster with VLAN tagged logical networks fail?

fence_ipmilan fails with "Chassis power = Unknown" in RHEL 5 or 6 or RHEV

fencing failure results in VM corruption

rx_crc_errors with Cisco VM-FEX in RHEV

Why do I observe RHEV hosts becoming non-operational and data centers becoming non responsive on HP FlexFabric?

Issue:

- Hosts can not access storage domains and become Non-Operational:
- Datacenters become non responsive due to RHEV-M failing to reach hosts over the network:

Host <host> cannot access one of the Storage Domains attached to the Data Center <dc>. Setting Host s

Invalid status on Data Center <dc>.

Setting Data Center status to Non Responsive (On host <host>, Error: Network error during communicati

Last Message: 2014-Apr-07, 09:54 User admin@internal logged in.

Alerts (2) Events Tasks (0)

Red Hat Access: RHEV and RHS-C

Diagnostic Services

The screenshot displays the Red Hat Enterprise Virtualization (RHEV) web interface. The top navigation bar includes the Red Hat logo, the text "Red Hat Enterprise Virtualization", and a user login status "Logged in user: admin@internal" with links for "Configure", "Guide", "About", and "Sign Out". A "Market Place" link is also present. Below the navigation bar is a search bar with the text "DataCenter:" and a "Log Viewer" button. The main content area is divided into two sections. The left section, titled "System", shows a tree view of the system components: Data Centers, Clusters, Hosts, Networks, Storage, Disks, Virtual Machines, Pools, Templates, Volumes, Users, and Events. The right section, titled "Log Viewer", displays two log entries. The first entry is for the file "10.13.49.152:ovirt.log" and the second is for "RHEV Manager:redhat-support-plugin-rhev.log". The log content shows a stack trace for a "java.lang.IllegalStateException: Cannot obtain Arquillian config for: sample.SampleTest" exception. The right section also includes an "Environment" section listing "JBoss Enterprise Application Platform (EAP) 6.0.1" and "Arquillian", and an "Issue" section stating "Arquillian test fails." and "target/surefire-reports/sample.SampleTest.txt file:". The bottom status bar shows "Last Message: 2014-Apr-07, 09:54" and "User admin@internal logged in." along with "Alerts (2)", "Events", and "Tasks (0)" indicators.

Red Hat Enterprise Virtualization

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Market Place

Search: DataCenter:

Data Centers Clusters Hosts Networks Storage Disks Virtual Machines Pools Templates Volumes Users Log Viewer Events

System

Expand All Collapse All

System

Data Centers

Default

Storage

Networks

Templates

Clusters

External Providers

Bookmarks

Tags

10.13.49.152:ovirt.log X RHEV Manager:redhat-support-plugin-rhev.log X

RHEV Manager : /var/log/ovirt-engine/redhat-support-plugin-rhev.log

Red Hat Diagnose

DEBUG Mon Nov 04 11:04:23.404 PST 2013 [27.0.0.1:8702-9] [Synch
DEBUG Mon Nov 04 11:04:41.167 PST 2013 [7.0.0.1:8702-10] [Synch
WARN Mon Nov 04 11:04:42.100 PST 2013 [7.0.0.1:8702-10] [Synch
java.lang.IllegalStateException: JBWEB000212: Session already i
at org.apache.catalina.session.StandardSession.setAttri
at org.apache.catalina.session.StandardSession.setAttri
at org.apache.catalina.session.StandardSessionFacade.se
at org.ovirt.engine.api.common.security.auth.SessionUti
at org.ovirt.engine.api.common.security.auth.Challenger
at org.ovirt.engine.api.common.security.auth.Challenger
at org.jboss.resteasy.core.ResourceMethod.invokeOnTarge
at org.jboss.resteasy.core.ResourceMethod.invoke(Resour
at org.jboss.resteasy.core.ResourceMethod.invoke(Resour
at org.jboss.resteasy.core.SynchronousDispatcher.getRes
at org.jboss.resteasy.core.SynchronousDispatcher.invoke

Arquillian test fails with "java.lang.IllegalStateException: Cannot obtain Arquillian config for: sample.SampleTest" exception.

Environment

- JBoss Enterprise Application Platform (EAP) 6.0.1
 - Arquillian

Issue

Arquillian test fails.

target/surefire-reports/sample.SampleTest.txt file:

Test set: sample.SampleTest

Last Message: 2014-Apr-07, 09:54 User admin@internal logged in.

Alerts (2) Events Tasks (0)

Red Hat Access: RHEV and RHS-C

Support Engagement

Search: Hos

System

Expand All

System

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Red Hat Access: Support

rhnsupportkroberts

Open New Support Case

Modify Existing Case

Summary:

Unable to approve host

Description:

2012-05-18 11:08:41,608 INFO [org.ovirt.engine.core.vdsbroker.RemoveVdsVDSCommand] (pool-19-thread-48) START, RemoveVdsVDSCommand(vdsId = 5a9fdd1c-a0fb-11e1-b64c-0018fe727668), log id: 2a9f7b13

Product:

Red Hat Enterprise Virtualization

Version:

3.3

Severity:

4 (Low)

Attachments:

☒ RHEV Manager SOS Report

☒ RHEV Manager Database

☐ Hosts

☒ 10.13.48.227

Recommendations

Unable to approve the RHEV host from the RHEV manager

Unable to approve the RHEV host from the RHEV manager

Issue:

- Trying to add a RHEV Hypervisor 6.2 to a RHEV-Manager (rhevm-3.0.3)¶
- Getting the following errors while doing so:

From /var/log/rhevm.log:

2012-05-18 08:10:36,143 ERROR [org.ovirt.engine.core.bll.Geto
..
2012-05-18 11:08:41,608 ERROR [org.ovirt.engine.core.vdsbroke
2012-05-18 11:08:41,608 INFO [org.ovirt.engine.core.vdsbroke
68), log id: 2a9f7b13

When does netdump create a directory such as "/var/crash/10.0.0.1-2012-05-10-11:36"?

Cannot add FCP Storage on RHEV 3.0.

Hosts that were moved to non-operational state do not return

Volumes

Users

Events

Memory

CPU

16%

0%

Documentation

Events



Red Hat Search

total, 5133 MB used, 269

total, 0 MB used, 24235 M

Red Hat Access: Red Hat OpenStack

Diagnostic Services



DISTRIBUTION

Project Admin **Red Hat**

Search

Log

Log

Logged in as: admin Settings Help Sign Out

You are currently signed in to the Red Hat Customer Portal as Dan Varga. [Sign Out](#) [Visit Customer Portal](#)

Instance Console Log

Red Hat Access: Diagnose

[1.865126] Serial: 8250/16550 driver, 32 ports, IRQ sharing enabled

[1.911063] serial8250: ttyS0 at I/O 0x3f8 (irq = 4) is a 16550A

[2.010615] serial8250: ttyS1 at I/O 0x2f8 (irq = 3) is a 16550A

[2.054006] Freeing initrd memory: 3628k freed

[2.110403] 00:05: ttyS0 at I/O 0x3f8 (irq = 4) is a 16550A

[2.168934] 00:06: ttyS1 at I/O 0x2f8 (irq = 3) is a 16550A

[2.184440] Linux agpgart interface v0.103

[2.203622] brd: module loaded

[2.213737] loop: module loaded

[2.229874] vda: unknown partition table

[2.240240] scsi0 : ata_piix

[2.246314] scsi1 : ata_piix

[2.253442] ata1: PATA max MWDMA2 cmd 0x1f0 ctl 0x3f6 bmdma 0xc0a0 irq 14

[2.263950] ata2: PATA max MWDMA2 cmd 0x170 ctl 0x376 bmdma 0xc0a8 irq 15

[2.275738] Fixed MDIO Bus: probed

[2.282287] tun: Universal TUN/TAP device driver, 1.6

[2.290767] tun: (C) 19992004 Max Krasnyansky <maxk@qualcomm.com>

[2.324711] PPP generic driver version 2.4.2

kernel rtc_cmos: probe of 00:0a failed with error -16 why ?

The message "i8042.c: No controller found" appears while booting

Touchpad on Dell Latitude E6420 recognized as legacy PS/2-Mouse

Error messages "i8042: probe of i8042 failed" on legacy-free hardware

What does the "kernel: do_IRQ: X.Y No irq handler for vector (irq -1)" message mean?

"i8042.c: Can't read CTR while initializing i8042" displayed during system boot

Is the Message "Failed to disable AUX port, but continuing anyway..." Benign?

The following panic message appears on the terminal: Badness in i8042_panic_blink at drivers/input/serio/i8042.c:992

HPET does not work on a 64 bit server.

Red Hat Access: Subscription Asset Manager

Integrated Knowledge Access

RED HAT Subscription Asset Manager

Red Hat Access ▾

admin

ACME_Corporation ▾

Dashboard

Subscriptions ▾

Systems ▾

Administer ▾

⚠

Red Hat Access allows you to search for articles and solutions in the Red Hat knowledge base. A valid Red Hat customer portal account is required to use this feature.

Logged in to the Red Hat Customer Portal as Lindani Phiri. [Log Out](#) [Visit Customer Portal](#)

Red Hat Access: Search

SAM installation issues

SUGGESTED SOLUTIONS

[Subscription Asset Manager \(SAM\) Quick Start Guide](#)

[Which reports are useful when troubleshooting issues with Subscription Asset Manager \(SAM\)?](#)

[Failed to update rhelm when SAM channel is enabled](#)

[How to configure SSL Certificates to set up multihome SAM?](#)

[Issues while installing SAM 1.2](#)

[Can Red Hat Satellite Server and Subscription Asset Manager \(SAM\) coexists on the same server?](#)

[How to configure HTTP proxy server on SAM server after its installation ?](#)

[How do I install or upgrade an RPM package?](#)

Environment

Subscription Asset Manager (SAM)

Issue

How to configure HTTP proxy server on SAM server after its installation ?

Resolution

To setup/configure HTTP proxy server on SAM you can make following changes

```
# vi /etc/katello/katello.yml
```

Search for following lines

```
# cdn_proxy:
# host: localhost
# port: 3128
```

Update these lines and restart as follows

Red Hat Access: RHEL

Diagnostic Services

```
[root@localhost ~]# redhat-support-tool
Welcome to the Red Hat Support Tool.
Command (? for help): btextract --all ~/vmcore

Select the crash command output to view or 'e' to return to the previous menu.
1 Output from crash 'bt -a'
2 Diagnose 'bt -a' output
3 Output from crash 'bt -e'
4 Output from crash 'foreach bt'
5 Output from crash 'log'
6 Output from crash 'ps'
7 Output from crash 'files'

Selection: 1
```

Red Hat Access: RHEL

Support Engagement

```
Command (? for help): listcases
```

```
Type the number of the case to view or 'e' to return to the previous menu.
```

```
1 [Waiting on Customer] Test case for strata.
```

```
1 of 13 cases displayed. Type 'm' to see more.
```

```
Select a Case: 1
```

```
Type the number of the section to view or 'e' to return to the previous menu.
```

```
1 Case Details
```

```
2 Modify Case
```

```
3 Description
```

```
4 Case Discussion
```

```
5 Recommendations
```

```
6 Get Attachment
```

```
7 Add Attachment
```

```
8 Add Comment
```

```
End of options.
```

```
Option: 
```

Red Hat Access: More Information

More Information

- **Red Hat Access – Red Hat Enterprise Virtualization**
 - <https://access.redhat.com/site/articles/425603>
- **Red Hat Access – Red Hat Storage Console**
 - <https://access.redhat.com/site/articles/473823>
- **Red Hat Access – Red Hat OpenStack**
 - <https://access.redhat.com/site/articles/470433>
- **Red Hat Access – Subscription Asset Manager**
 - <https://access.redhat.com/site/articles/524483>
- **Red Hat Access – Red Hat Enterprise Linux**
 - <https://access.redhat.com/site/articles/445443>

Red Hat Subscription Tools: Continuous Uptime with Dynamic Kernel Updates

Linda Wang

Market Demands

- Minimized down time
- Faster delivery of fixes
- Introduce 'dynamic kernel updates' feature
- What is different about this implementation...
 - Open source solution
 - Work with existing upstream infrastructures and functionalities
 - Provide easy identification for support purposes
 - Most importantly reduce, mitigate risks...

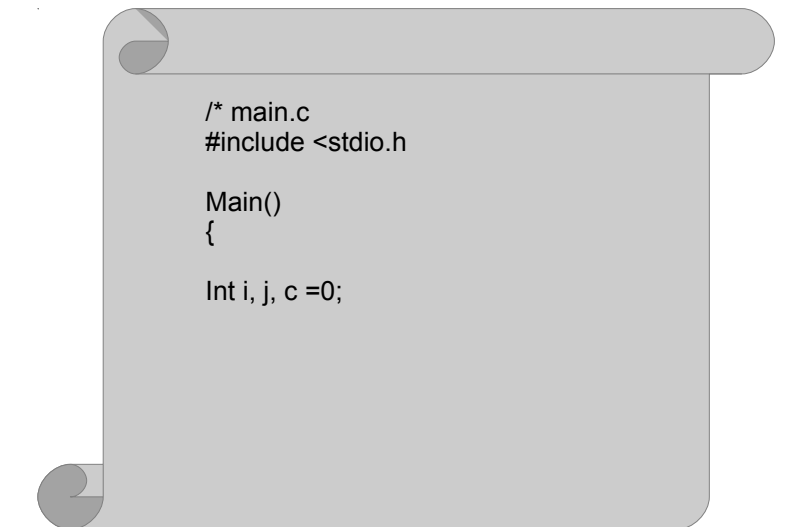
Dynamic Kernel Updates

- Technical Overview: Multiple Stages



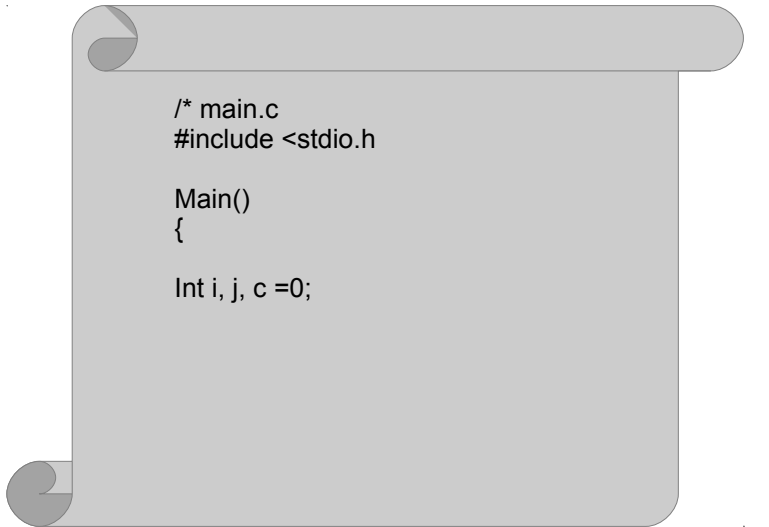
1. Analysis of the code changes
2. Converting the code change into an insertable entity
3. Insertion the entity into the running kernel

Stage 1: Analysis of the Code Change



- Identifying Patch Candidates
 - Understand all the implications, limitations, ramification
 - static data structure, init() functions, functions on the stack
 - Does the patch meet these criteria?
 - Deep dive and analysis the code change itself
 - Is it suitable for dynamic patching?
 - What else does the code change?

Stage 1: Analysis of the Code Change



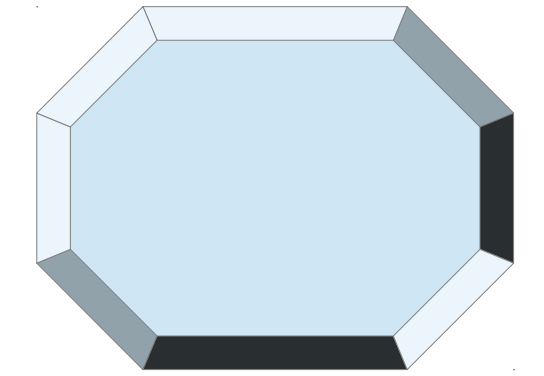
- Object Level Comparison
 - More indepth analysis by building the change as a kernel object
 - Benefits: One to one relationship between function/objects symbols
 - Cherry picking the code and data segment for the output object.
 - Allow comparison of the section to determine if a function or object has changed.
 - Relocatable Object
 - Isolate each text/rela section pair that maps to a function, from other changes.
 - Each function has its own section to prevent spillage its changes into other functions address space.
 - Many more...

Stage 2: Conversion of a Patch



- Once the code has been thoroughly analyzed, next is to convert..
- Conversion requires adding two extra sections to the object file
 - One section contains the address of the base function
 - Another section contains the address of the patched function
- Also statically link in non-export symbols into the symbol table
 - For global entry not exported by the kernel, symbol is looked up in vmlinux and add in.

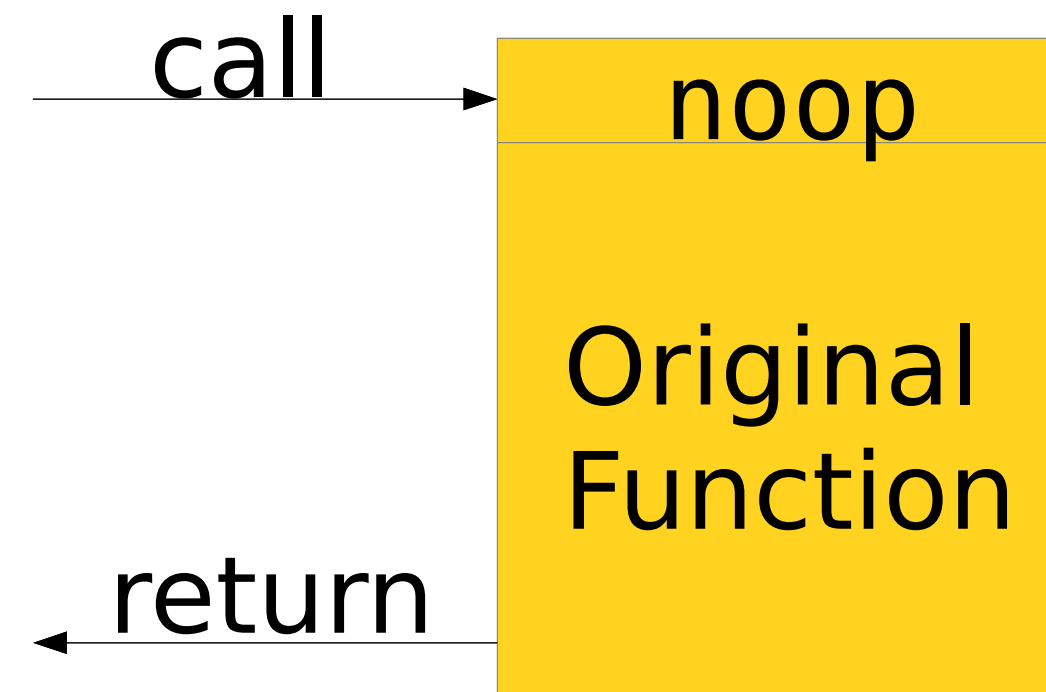
Stage 3: Insertion of the Patched Entity



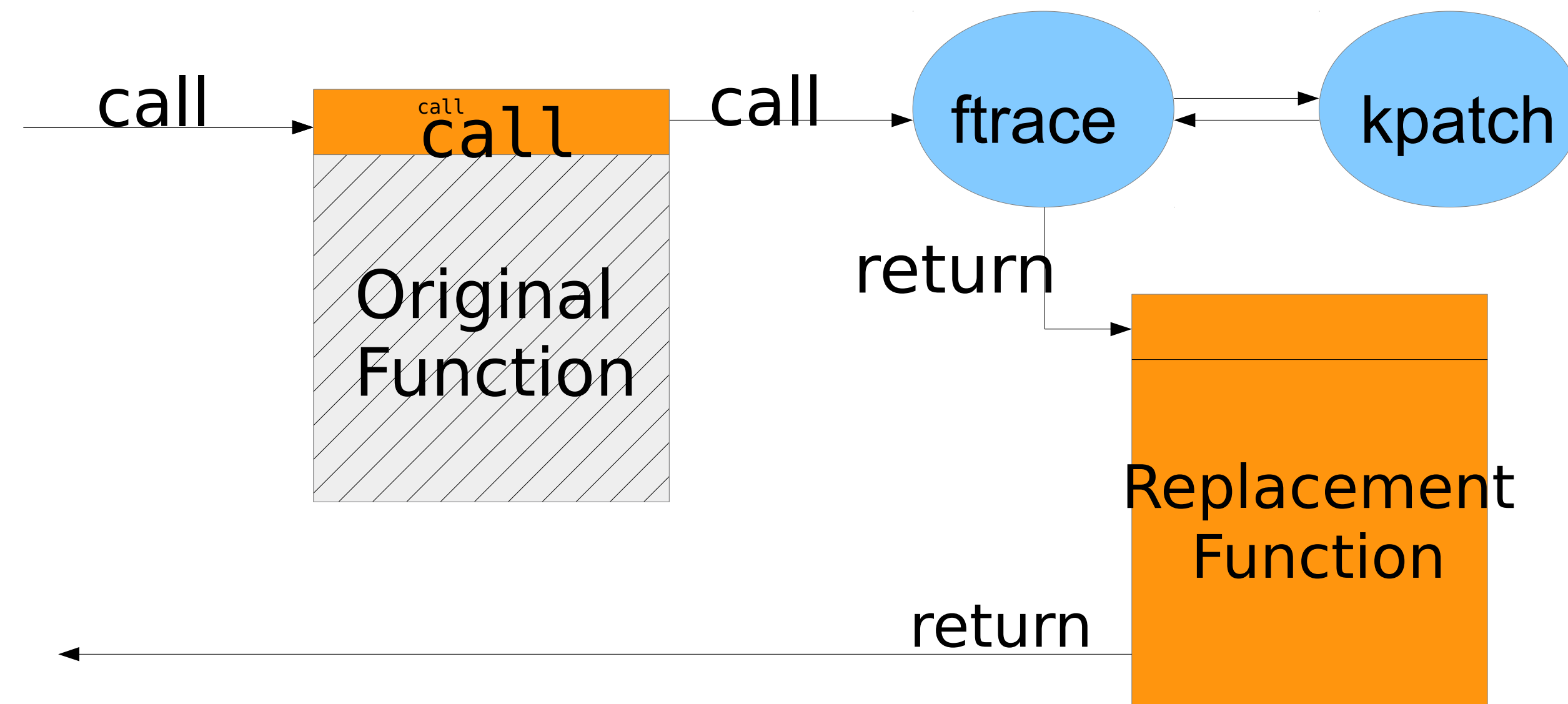
- Insertion of the changed object file
 - Verify activeness safety
 - Registered the patched-to-be function with in-kernel trampoline function
 - When ftrace hits this target function, trampoline function is called by ftrace immediately before the target's original code is executed.
 - Then the trampoline code then modifies the return instruction pointer on the stack, and return to ftrace, then restore the original function arguments and stack and continue with the new function.
 - When the new function finishes executing, it returns to the original return instruction pointer on the stack.

Dynamic Kernel Updates

Before
patching:

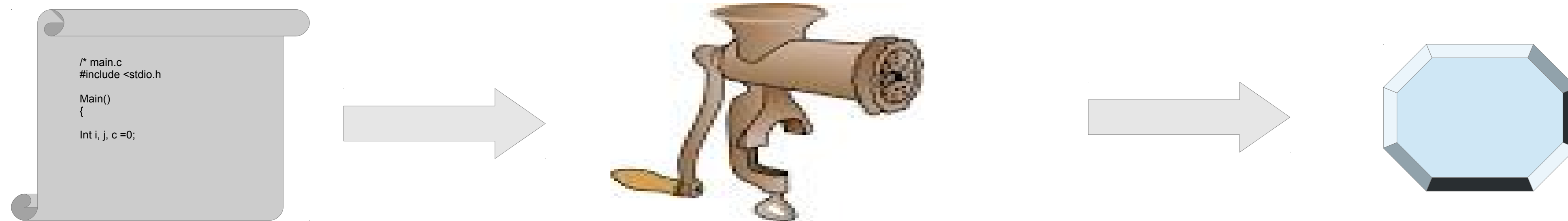


After
patching:



Dynamic Kernel Updates

- What stage is most critical?



1. Analysis of the code changes
2. Converting the code change into an insert-able entity
3. Insertion the entity into the running kernel

Dynamic Kernel Updates

- What stage is most critical?



1. Analysis of the code changes!!
2. Converting the code change into an insert-able entity
3. Insertion the entity into the running kernel

Stage 1: Analysis of the Code Change

- Lets move all the hard work upfront
- Mitigate risks by ...
 - deep dive and analysis the code change
 - Understand all the implications, limitations, ramification
 - Does the patch meet the criteria?
 - Is the patch function suitable for dynamic patching?
 - Built necessary tool to help with these tasks – eliminate human error



Productization & Providing Services

- Compatible with all the existing debugging features
- Functional with all the existing supported functionalities
- Persistent states across reboots
- Meet any necessary certification, standardization requirements

Learn More About Dynamic Kernel Updates

- RHELBlog: <http://rhelblog.redhat.com>
 - <http://rhelblog.redhat.com/2014/02/26/kpatch/>
- Join the Development: <https://github.com/dynup/kpatch>
- Mailing List: kpatch@redhat.com

<Maximizing RAS with RHEL7 RC: April 16th, 2:30 – 3:30 pm>

<Demo @ Partner Pavilion: Wed., April 16th, 1:00 – 2:00 pm>

The logo consists of a red speech bubble shape pointing downwards, containing the text "RED HAT" in small white capital letters above the word "SUMMIT" in large white capital letters.

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Demo