Support @SUSE
The Entire Chain from an Incident to a Fix
SessionID: BOV1101

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Kernel panic - not syncing: Attempted to kill init! exitcode=0x00007f00

Pid: 1, comm: init Not tainted 3.4.6-1.1-desktop #1

Call Trace:
______
6.942157 dump_trace+0x88/0x300
6.942697 dump_stack+0x69/0x6f
6.942668 panic+0xhe=0x1c7
6.942734 do_exit+0x870/0x350
6.942810 do_group_exit+0x38/0xa0
6.942891 sys_exit_group+0x12/0x20
6.942894 system_call_fastpath+0x1a/0x1f
6.943676 <0x000f520544401> 0x7f72054440
6.944042 ---I cut here 1--
6.944115 WARNING: at/home/buildrpmbuild/ BUILD/kernel-desktop-3.4.6-1.4/arch/x86/kernel/smp.c:120 update_process_ times+0x63/0xb0
6.944299 Hardware name: Proliant DL380 G7
6.944359 Modules linked in: dm_mod linear radeon ttm ksm_helper drm 12c_algo_bit thermal processor thermal_sys scsi_dm_ alua scsi_dm_raid scsi_dm_emic scsi_dm_hp sw scsi_dm_atasata_genetic ata_pliux hyphen
6.944696 Pid: 1, comm: init Not tainted 3.4.6-1.1-desktop #1

Call Trace:
______
6.944824 dump_trace+0x88/0x300
6.944995 dump_stack+0x69/0x6f
6.945001 warn_slowpath_common+0x79/0xc0
6.945075 update_process_times+0x63/0x6f
6.945169 tick sched timer+0x51/0xc0
6.945254 run hrtimer+0x6b/0x6b
6.945337 hrtimer interrupt+0x9/0x20
6.945428 mp_send_soft irq+0x63/0xa0
6.945524 mp_send_soft irq+0x6b/0x7b
6.945617 default send IF I mask all but self phys+0xb0/0xf0
6.945730 native_mmi_stop_other_cpus+0xa9/0x110
6.945831 panic+0x6c/0x1c7
6.945903 do_exit+0x870/0x350
6.945977 do_group_exit+0x38/0xa0
6.946059 sys_exit_group+0x12/0x20
6.946141 system call fastpath+0x1a/0x1f
6.946300 [ end trace 8fe8e44563495e ]
6.946376 panic occurred, switching back to text console
What are you supposed to learn about today

• How is the SUSE support organization set up
• How to create the perfect Support Ticket
• How to avoid escalations & tips and tricks if you still run into one
• SUSE Support model
• Where do the software patches come from
• What is a PTF and how does it help you
• The limits of support
Support @SUSE
Global Support Locations – SUSE

- Support centers based in US, EMEA, and APAC
- Covering 24x7x365
SUSE Support numbers at a glance

- **25 years** experience in supporting Linux
- Support Staff, support centers & field offices around the globe
  - (US support center in Utah, European support center spanning Prague & Nuremberg, Singapore as the latest SUSE support location as well as Japan and China)
- SUSE supported approx. **3,000 customers** in the last 12 months in over **90 countries**.
- **23,000 support incidents** raised in the last 12 months.
- Average tenure within SUSE Support team is **12 years**
SUSE – Supported Products

SUSE is much more than just an Operating System or a Platform!

- SUSE Enterprise Server (SLES)
- SLES for SAP Applications & SAP HANA
- SUSE Desktop / Workstation Extension
- SUSE Manager
- High Availability Extension
- SUSE OpenStack Cloud & Cloud Application Platform (CAP)
- SUSE Enterprise Storage
- Container as a Service Platform (CaaSP)
- Docker & Kubernetes
- Subscription Management Tool
- Real Time Extension
- Point of Service
- Expanded Support
SUSE Customer Center
Creating a Service Request

- https://scc.suse.com
- https://scc.suse.com/docs/help
SUSE Support Escalation Handling

• In case of a system/production down situation: Call our 1st line support team!

• Explain your business impact:
  - How many users are affected / is this a production system?
  - When exactly did the server go down
  - What has been changed before/after that happened
  - Does a workaround exist
  - Add $ impact if possible

• Provide as much information as possible (dump, logs, supportconfig)

• SUSE does have a follow-the-sun model with engineers worldwide
SUSE Support Handbook & Subscription model

- https://www.suse.com/support/handbook
- Phone numbers can be found here
- Subscription model:
  - Standard (12x5) vs. Priority (24x7)
  - Premium options 'à la carte' (dedicated contact)
- Scheduled standby
- Severity definitions (Low/Medium/High/Critical)
  - Critical: The operation is in production and is mission critical to the business. The product is inoperable and the situation is resulting in a total disruption of work. There is no workaround available.
  - High: Operations are severely restricted. Important features are unavailable, although work can continue in a limited fashion. A workaround is available.
SLES for SAP - Process

- SUSE is working within the SAP ticketing system
- Customer can pick:
  - Work with SUSE directly
  - Work within the SAP tool and get SUSE support there
  - SAP 1st level support will verify if the issue is SUSE or SAP related
- Dedicated SUSE engineers onsite @ SAP to assist SAP L3
- SUSE sitting within the SAP Applications department
Questions?
L3 Support and PTFs
L3 Support

- Opening a support ticket can result in finding a software defect
- Worldwide team of R&D engineers, working round the clock
- **Mission**: provide fast and reliable resolution of complex issues that can not be solved by L1 and L2 support
- Direct access to **500+** top Linux engineers in R&D
- Prioritization process for L3 issues
- 24x7 R&D on call duty service
- ~3100 L3 issues handled per year
Program Temporary Fix (PTF)

- **Quick** targeted fix before a patch has been released by maintenance
- Enterprise-grade process to guarantee quality of solution...
PTF Facts

- Full support
- Fix included in the next maintenance update
- Minimal changes
- Minimize risk of regressions
- Fix the right issue
- Workflow open until the fix is confirmed
- Security & Integrity
- Digitally signed and verifiable
- Customer specific
- No fixes are lost
Designed for Production
Best Practices with PTFs

- PTFs are distributed as plain http directories
  - https://www.suse.com/de-de/support/kb/doc/?id=7016640
    - Access with SCC credentials
    - Install with ‘rpm -Fvh *.rpm’
    - Kernel PTF might be installed in parallel to the existing one

- PTFs are signed with a special key
  - https://www.suse.com/de-de/support/kb/doc/?id=7016511
    - The key should be imported

- Please, provide feedback!
Maintenance @SUSE
Support vs Maintenance

- SUSE Support and L3: reactive support
- SUSE Maintenance: proactive delivery of fixes

- Known bugs are fixed
- Periodic releases
- For all customers
Scope

• Maintenance coordinators:
  • Collect information about bugs and fixes from various sources
  • Decide when to start/release an update for a specific package

• Fixes accumulated since last release have to be included
  • Issues reported (& confirmed) by customers: PTFs
  • Security issues: CVEs
  • Backports from upstream
Principles and Goals

- Balance between timely release and number of updates
- Avoid regressions
  - Challenge: bug fixes can introduce new bugs
- Stable application interfaces
  - API, ABI
- Minimal changes
- No version updates
- All PTFs are included
- All supported architectures
Quality Assurance

- Maintenance updates go through quality assurance
- Manual and automated testing

- Installation tests to ensure the update can be installed without issues
- Validation tests to ensure all mentioned bugs are fixed
- Regression tests to check that common use cases still work after applying the update
Recommendations

- Install maintenance updates as soon as possible
- Treat PTFs as first-class packages, fully supported
- Provide feedback on PTFs as soon as possible
The Perfect Support Ticket
What is needed by SUSE Support?

• Provide a detailed problem description
  • System patch status
  • Exact time of error
  • Recent changes
  • Details on infrastructure
  • Anything that could be useful
  • Check your contact details in SCC
  • Are we contacting the right person?

• Provide supportconfig (sosreport) of all involved systems
• For HAE customers: provide hb_report
• For SUSE Manager customers: provide spacewalk-debug
Support resources

- The knowledgebase:
  - https://www.suse.com/support/
- Technical blogs:
  - https://www.suse.com/communities/blog/
- Patches & Updates:
  - https://download.suse.com/patch/finder/
- Product documentation:
  - https://www.suse.com/documentation/
How to prevent system down situation and keep a server on a supported level

- Check the supported status of an OS version:
  - https://www.suse.com/lifecycle/

- Patch your system to the latest available maintenance updates:
  - e.g. Kernel versions overview

- In general SUSE will still provide best effort support in certain scenarios, for example in a system down scenario it will still be attempted to at least get a system in a running state again.
  - Depending on the root cause of the problem, it may be expected / required that a system needs to be patched / updated.
The Limits of Support
Offerings beyond the normal support contract

- Yes, some topics are not part of the regular support subscription
  - Scheduled standby
  - Installation & Upgrade Assistance
  - Deployments & Project Management
  - 3rd Party software
  - Tainted Kernels
  - Training
Questions?
SUSE Organizational overview

- R&D
- Quality Assurance
- Engineering (L3)
- Maintenance / Security
- Infrastructure (e.g. Bugzilla)
- Product Teams

Customers & Partners
- Customer Service Representative
- Premium Support
- Worldwide Support
  - L1
  - L2