





Top 25 New Features in (Auto)YaST



Passwordless SSH Authentication

• Installation: SSH-based root authentication

• System: management of SSH keys for users

• Introduced in 15.1

Passwordless SSH Authentication

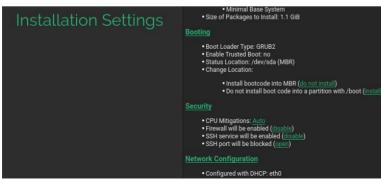
SUSE		
Authentication for the SystemDo not forget what you enter here.Administrator "root"Password for root User		
Confirm Password		
Import Public Key		
Help Release Notes		<u>N</u> ext

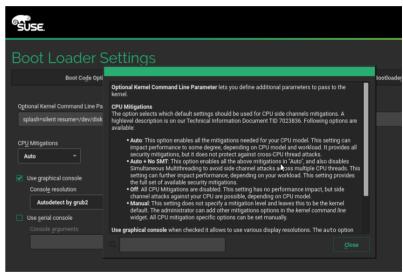
Passwordless SSH Authentication

YaST2 - users @ Existing Local رUser Data—Det		-SSH Public Keys-Plug-Ir	15
	Ulpf3U1IcUixKnV7jZGl7UB4, '+bJXkqL5bu01YVbwGIh1mTpTi		<u>yc2EAAAABI</u>
[Add][Remov	re]		
[Help]	[Cancel]		[OK]
1 Help F8 Cano	el <mark>F10</mark> 0K		

Mitigation of CPU Vulnerabilities

- Easy configuration of protection against Spectre and Meltdown
- Adjustable in YaST Bootlader
- Configurable during installation
- Introduced in 15.1
- Backported to 15.0





Improved Services Management

• Introduced in 15.1

Services Manager

Default System <u>T</u>arget Graphical Interface

Service *	Start	State	Description			-
firewalld	Manually	Inactive (Dead)	firewalld - dvnamic firewall daemon			
fstrim	💮 🗗	YaST2 - s	ervices-manager @ linux-rijh	×		
getty@tty1		10012	er nees manager (e anax njn			
getty@tty7	C		-			
gpm	Summa	ary of change	-5			
grub2-once						
halt	Default tar	rget will be changed t	o 'Graphical Interface'	-		
halt-local						
haveged	The follow	/ing services(1) will b	e stopped:			
initrd-cleanup	cups					
initrd-parse-etc						
initrd-switch-root		5 17	e configured to start on demand:			
initrd-udevadm-cleanup-db	cups, iscsi	uio				
irqbalance						
iscsi		/ing services(1) will b	e configured to start manually:			
iscsid	iscsi					- 1
iscsiuio				-		
isnsd						
issue-add-ssh-keys						
issue-generator			Yes No			
kadmind			<u>100</u>			
kbdsettings		1 (5				
kexec-load	Manually	Inactive (Dead)	load default kernel into the current kernel			
klogd	Manually	Inactive (Dead)	System Kernel Logging Service			
kmod-static-nodes	Manually	Active (Exited)	Create list of required static device nodes for	or the current ke	mel	
kpropd krb5kdc	Manually	Inactive (Dead)	Kerberos 5 Propagation Kerberos 5 KDC			
	Manually	Inactive (Dead)				
lifecycle-report	Manually	Inactive (Dead)	Report changes in product/package lifecycle	2		Ŧ
<u>S</u> tart Sta <u>r</u> t Mode ≁					Show <u>D</u> etails	Show <u>L</u> og
<u>H</u> elp				<u>C</u> ancel	Apply	<u>о</u> к

Bcache Management

• Introduced in 15.1

 linux-rijh Hard Disks 			<u>B</u> cache	e Devi	ces			Caching Set Devices					
▼ vda vda1	Device	-	Size	F	Enc	Тур	e	FS Type	Label	Mount Point	Start		End
vda1	/dev/bcac	he0	5.00 GiE	}		2	Bcache					0	1048
vdb	/dev/bcac	he0p1	0.93 GiE	3		3	Linux Native	Ext4		/mnt		34	19
vdc	/dev/bcac		94.99 MiE	3		2	Bcache					0	1
✓ vdd	/dev/bcac	he2	51.99 MiE			9	Bcache					0	1
vdd1 vdd2			51.02 MiE			R	Linux Native	XFS		/mnt3		34	1
vdd2 vdd3		F				6-O		0000				1000	
C RAID													
 Volume Management 													
▼ my_vg													
bcache2													
 Bcache 													
bcache0													
bcache0p1													
bcache1													
 bcache2 													
bcache2p1													
NFS NFS													
Btrfs													
Device Graphs													
Installation Summary													
Settings													
	4												
	Madifi	•	Partitions	10	Delet								
	Modify			11	Delet	e							
	Edit B	cache									Add	Bca	che
	Chang	ie Cac	hing	_									
			Partition Ta	blo									
Help	cleate	new	r ai uuon 1a	DIG						Abort		Fi	nish

More Powerful Configuration Management

• Updated support for SUMA Salt Parametrizable Formulas

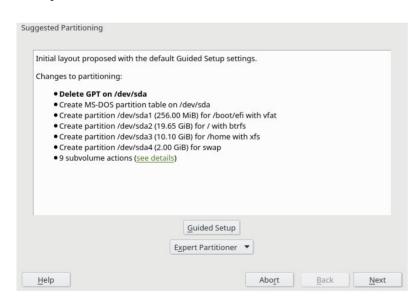
Firstboot support

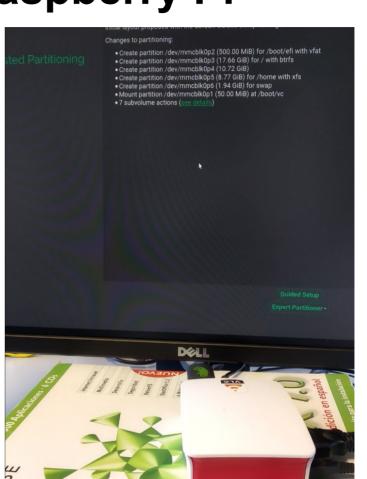
Introduced in 15.1

	YaST2 -	configuration_management @ linux-qu2b	×
dhcpd			
Sections	YaST2 -	configuration_management @ linux-qu2b ×	
Listen Inter			nge Broadcast 192.168.1
Network Co Hosts with	-	Network IP	
110010 11111	 Subnets Dynamic IP Range 	192.168.1.0	
	Routers		
	Hosts with Static IP A	Netmask	
		255.255.255.0	
		Domain Name	
		Comment	
		Broadcast Address	
		192.168.1.255	_
		Next Server	
		192.168.1.1	
		Filename	• • • • • • • • • • • • • • • • • • •
	4	/boot/pxelinux.0	
			Remove
		<u>C</u> ancel <u>O</u> K	J
	•		
<u>H</u> elp		Abo <u>r</u> t <u>B</u> ad	x <u>N</u> ext

Installer Support for Raspberry Pi

- Introduced in 15.1
- Improved in 15.2





Firewalld configuration

- Introduced in 15.1
- Improved in 15.2

	YaST2 - firewall @ vikingo-la	ptop	×
Adding new zone			
<u>N</u> ame			
custom			
Short			
custom			
Description			
This is my custom zone	5		
<u>T</u> arget default ▼			
✓ IPv4 Masquerade			
Help		<u>C</u> ancel	<u>O</u> K

tem View	Services	Services	
Start-Up Interfaces	Known		Allowed
Zones	Name 🚽		Name 👻
block drop external home internal public trusted work	amanda-client amanda-k5-client amqp amqps apcupsd bacula bacula-client bgp bitcoin bitcoin-rpc bitcoin-testnet bitcoin-testnet bitcoin-testnet-rpc ceph ceph-mon cfengine condor-collector ctdb dhcp dhcpv6	Add All → Add All → ← Remove ← Remove All	ssh

YaST2 - firewall @ linux-tdi6

Better error reporting in AutoYaST

- Introduced in 15.1
 - General mechanism, errors reported early
 - Basic checks for <partitioning>
- Introduced in 15.2
 - Advanced consistency checks for <partitioning>
 - ior spartitioning-
 - Network-related checks
 - Firewall checks

JSE
Execute pre-install user scripts Configure General Settings Set up language
Preparing S' Partitioning issues
for Autor Minor Issues were detected while creating the partitioning plan: Insta • drives[3], partitions[2]:
Insta • drives[3], partitions[2]:
 These elements are conflicting: raid_name, lvm_group. Only 'raid_name' will be considered.
Do you want to continue?
Continue Abort
Creating partition plans
33%

Improvements in Several Network Screens

- Wireless configuration (simplified workflow + specific tab)
- Improved overview of bonds and bridges
- Completely revamped UI for routing
- Better support for s390 systems
- Better udev rule handling
- Introduced in 15.2

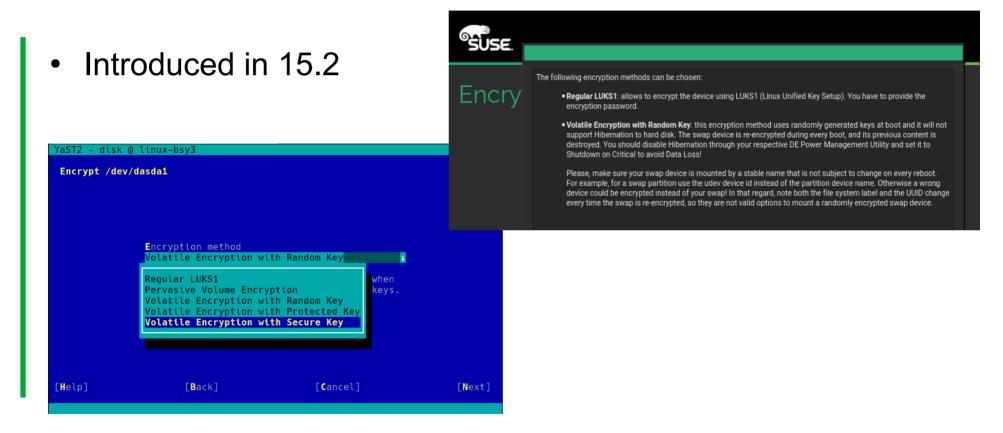
	YaS	T2	- Module — YaST2 - routing @ vi	kingo.suse.co	om	×
	Enable I <u>P</u> v6 Fo	orw	varding			
R	outing Table					-
	Destination	*	Gateway	Device	Options	
	default		192.168.20.1	em1		
	default		2620:113:80c0:8100:10:163:0:2	em1		
	default		2607:f0d0:1002:11::1	em1		
			Add Edit D	elete		
	<u>H</u> elp		Abort	 Back	Next	

Multi-device Btrfs

• Introduced in 15.2

System View	🕼 Btrfs (sdb1)		
 ✓ □ linux-rijh ✓ S Hard Disks 	Overview	<u>U</u> sed Devices	
✓ sda sda1 sda2	Device ▼ Size F Enc Type /dev/sdb1 2.00 GiB		
sda3 ▶ sdb ▶ sdc ▶ sdd ▶ sdd ▶ sde	/dev/sdc1 2.00 GiB Part of Btrfs (sdb1) /dev/sdd1 2.00 GiB Part of Btrfs (sdb1) /dev/sde1 2.00 GiB Part of Btrfs (sdb1)	Add Btrfs RAID Level RAID Level for Metadata	
RAID Volume Management Bcache		Default Default SINGLE Available Device DUP	
► NFS ► Btrfs (sdb1) sda2		Device Size RAID0 /dev/sda3 2.00 RAID1	
t Device Graphs Installation Summary ♀ Settings		RAID10	
			\underline{A} dd → \underline{A} dd All →
Help			← Re <u>m</u> ove

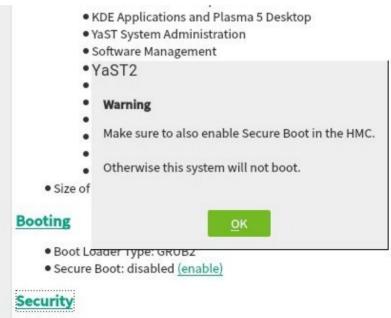
Advanced Encryption Features



Secure Boot Support for IBM zSeries

- Special feature available only in some recent mainframes
- Unified interface with UEFI Secure Boot

ot Loader Settings	
Boot Code Options	Kernel Parameters
Boot Loader	
GRUB2 V	



Improved Compatibility with WSL

- Windows Subsystem for Linux
- Only WSL1 so far
- Firstboot does not try to use systemd
- Firstboot can be used to register the system
- The control center only displays working modules
- Introduced in 15.2

Online Search for SUSE Linux Enterprise

Introduced in 15.2 •

Search <u>P</u> ackage Name ruby ✓ Ignore Case <u>S</u> earch	Status	Name ruby2.5-rubygem-builder ruby2.5-rubygem-bundler ruby2.5-rubygem-byebug ruby2.5-rubygem-chebug-debuginfo ruby2.5-rubygem-cfa ruby2.5-rubygem-chetah ruby2.5-rubygem-chetah ruby2.5-rubygem-childprocess-0_6 ruby2.5-rubygem-childprocess-doc-0_6 ruby2.5-rubygem-coderay ruby2.5-rubygem-coderay ruby2.5-rubygem-coderay ruby2.5-rubygem-coderay ruby2.5-rubygem-coderay ruby2.5-rubygem-coercible ruby2.5-rubygem-coercible ruby2.5-rubygem-coercible-doc ruby2.5-rubygem-coercible-testsuite	Module/Extension Basesystem Module Basesystem Module Basesystem Module Basesystem Module Basesystem Module Basesystem Module SUSE Package Hub SUSE Package Hub SUSE Package Hub SUSE Package Hub SUSE Package Hub SUSE Package Hub SUSE Linux Enterprise H SUSE Linux Enterprise H
	Name: Versio Archit	ckages found : ruby2.5-rubygem-childprocess-testsuite-0_6 :n: 0.6.3-bp152.3.6 :ecture: x86_64 le/Extension: SUSE Package Hub (not registered)	<u>T</u> oggle sele

VaST2 — VaST2 - sw single @ sles15sn2

YaST NTP Client & Systemd

- Use a new systemd timer
- No more cron
- The new timer conflicts with the chrony daemon
- Introduced in 15.2

Split of Configuration Files

- Helping users to cope with the new "/etc + /usr/etc" layout
- Better overview of all the /etc/something.d/ directories
- Consolidate files and represent current active settings
- Write to sensible files (eg. /etc/sysctl.d/70-yast.conf)
- Introduced in 15.2 (sysctl, logins.defs)
- Continuously improving in Tumbleweed

I/O device auto-configuration for zSeries

- Special feature available only in some recent IBM mainframes
- Introduced in SLE-15-SP2 quarterly update
- Also available in Tumbleweed

Network Configuration Disk Activation System Analysis Interfaces Online Repositories Configured with DHCP: ens4 Add-On Products Hostname / DNS V Disk Hostname: Set by DHCP Time Zone Routing User Settings IP Forwarding for IPv4: off IP Forwarding for IPv6: off → Installation Overview Perform Installation Using wicked (switch to NetworkManager) Kdump Kdump status: enabled Value(s) of crashkernel option: 203M, high Dump format: Izo Target of dumps: /var/crash Number of dumps: 5 **Device Settings** Blacklist devices: enabled (disable) I/O device auto-configuration: disabled (enable)

AutoYaST Profile: Better XML Parser

- More precise conversion XML \leftrightarrow data
- Accurate error reporting
- Optional concise syntax
- Integrated validation
- Only Tumbleweed so far

openSUSE.	Tumbleweed	Preparing System	for Automatic	Installation				
se Installation Installer Update	YaST2							
Welcome AutoYaST Settin	Error							
Perform Installat nfiguration System Configur	The AutoYaST pro	The AutoYaST profile is not a valid XML document.						
	Using an invalid XML loss!	Using an invalid XML document might result in an unexpected behavior, crash or even data loss!						
	Details							
	5:0: ERROR: Element profile has extra content: software							
	Note							
	You can check the file	e manually with these command	ls:					
		2/schema/autoyast/rng/profile. axng /usr/share/YaST2/schema/		ng software.xml				
		Continue Ca	ncel					
		<u>H</u> elp		Abo <u>r</u> t <u>B</u> a	ck <u>N</u> ext			

Dynamic AutoYaST Profiles with ERB

- Compatible with AutoYaST pre-scripts
- Helpers: disks, network_cards, os_release
- Test client for dynamic profiles
 - Profile fetching
 - Rules&classes, pre-scripts, ERB
 - XML syntax and schema checks
- Only Tumbleweed so far

*	ruby.ruby2.7 (on localhost.localdomain)	†	2
utoYaST co	nfiguration file check		
Importa <mark>nt</mark> issue	s were detected:		_
• bootloa	ler:		
	nvalid value 'grub' for attribute 'loader_type': The selected bootloade on this architecture. Possible values: none, grub2, grub2-efi, default, c		d
Please, correct t	hese problems and try again.		
	k		
	Abort		

AutoYaST UI: Editing Drives

	YaST2 - autoyast @ linux-esc8 ×				
 Only Tumbleweed so far 					
Vation Vertice Vertice <th> Drive (LVM): /dev/vg-0 Partition (LV): swap, swap Partition (LV): var, /var Partition (LV): root, / Partition (LV): home, /home Drive (Disk): /dev/sda Partition: /boot/efi Partition: /boot Partition: Part of vg-0 </th> <th>General Create Format Yes No Resize Size No 476.19 GiB Partition Number UUID Partition Id Partition Type 142 Fncryption Method Encryption Key Encryption K</th> <th><u>U</u>sed As</th>	 Drive (LVM): /dev/vg-0 Partition (LV): swap, swap Partition (LV): var, /var Partition (LV): root, / Partition (LV): home, /home Drive (Disk): /dev/sda Partition: /boot/efi Partition: /boot Partition: Part of vg-0 	General Create Format Yes No Resize Size No 476.19 GiB Partition Number UUID Partition Id Partition Type 142 Fncryption Method Encryption Key Encryption K	<u>U</u> sed As		
Add Drive Add Partition Delete Help Cancel	Add Drive Add Partition Delete Help		Cancel Finish		

Exporting a Reduced AutoYaST Profile

- yast2 clone_system [modules] target=compact
 - YaST Users: do not export non-system users
 - YaST Firewall: export only modified zones
 - YaST Services Manager: export only changed services
- Only Tumbleweed so far

Recognizing LVM Advanced Features

- No more warnings like this for:
 - LVM Cache
 - LVM RAID
 - Mirror logical volumes
 - LVM Snapshots (both thick and thin)
- Correct visualization (with relatively limited operation)
- Possible to upgrade a system
- Only Tumbleweed so far

Detected Lynn logical volumes of unsupported types.
/dev/system/home /dev/system/root
These logical volumes are ignored. Operations on the corresponding volume groups may fail.
Unexpected situation found in the system.
Continue despite the error?
C <u>o</u> ntinue Abo <u>r</u> t

Detected LVM logical values of unsupported types

Look&Feel for Installer and YaST Firstboot

- Unified
- More configurable
- Only Tumbleweed so far

Suse	Language		Configuration + License Agreement	Suse	
	English (US)		Language and Keyboard Welcome		<u> </u>
License Agreement	LICENSE AGREE		Provide States	License Agreement	
	License openSUSE* Tur	bleweed	Root Password		
Language	A cure o monorat	nt governs your download, installation, or use	Finish Setup		
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This EULA can be found in the directory /usr/share/licenses/oroduct/base/		found in the directory		This EULA can be found in the directory	
	/usr/share/license	is/product/base/		/usr/share/licenses/product/base/	
Help Abort Back Next	Halo	Abort Back Next			

Improved Partitioner Interface

All Devices	Device \	 Size 	F	Enc	Туре	Label	Mount Poi
Hard Disks	/dev/md/EFI	492.13 MiB			FAT RAID		/boot/efi
sda	/dev/md/OS	7.39 GiB			📄 PV of system		
sdb	🔻 /dev/sda	8.00 GiB			📕 HGST-HGST HTS7		
sdc	sda1	500.00 MiB			💽 Part of EFI		
RAID	sda2	7.51 GiB			💽 Part of OS		
EFI OS	▼ /dev/sdb	468.00 GiB			Disk		
	sdb1	500.00 MiB			😨 Part of EFI		
LVM Volume Groups	sdb2	467.51 GiB			Part of OS		
system Bcache Devices	▼ /dev/sdc	2.00 TiB			Disk		
Btrfs	sdc1	12.00 GiB			S FAT Partition	CRAYINSTALL	/var/cray/v
root	sdc2	0.88 TiB			💿 PV of system		
₹ NFS	sdc3	100.00 GiB			Ext4 Partition	CRAYNFS	/var/lib/nfs
	sdc4	1.01 TiB			💽 Ext4 Partition	CRAYK8S	/var/lib/cra
	▼ /dev/system	0.89 TiB			C LVM		
	▼ root	0.89 TiB			BtrFS LV		/
	@/home				BtrFS Subvolume		/home
	@/opt				BtrFS Subvolume		/opt
	@/root				BtrFS Subvolume		/root
	@len				DtrEC Cubyolumo		leni
	Ed <u>i</u> t Add	d <u>P</u> artition					







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