

All v2

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- Introduction
- All v2 - What's new?
- Upgrading
- Contributing

- What is All?
 - Setup DHCP, PXE and Kickstart for automated installation
 - Per host: configuration from host template
 - “Convert template into DHCP, PXE, KS files”

- All v1 limited to PXE + Kickstart
 - Future enhancements: Jumpstart, ... ?
- Device schemas:
 - Traditionally /dev/[hs]d[a-z] : disks
 - Already hacked /dev/cciss/c0d0p1
 - RAID? LVM?

- Templates for PXE & KS: ncm-tempate
 - Loved by some, hated by others (mainly the maintainers)
 - Hacking new features, site-specific changes
 - *Two official* KS templates !?
 - Templates became too complex: not maintainable!
- Schema: untyped
 - Good during development phase
 - Run-time checks only, no compile time check....
- Code more complex than needed
 - 2854 lines (v1) vs 1607 lines (v2)
(Numbers from Luis' presentation in October)

- Architecture
- Pan setup
- Usage

- All is front-end for plug-ins
 - Similar to ncm-ncd
 - Plug-ins inherit from NCM::Component
- Three types of plug-ins:
 - NBP aii-pxelinux (NEW)
 - DHCP aii-dhcp
 - osinstall aii-ks (NEW)
- Node profile determines which plug-ins are loaded

- Default plug-in for NBP
 - Generates PXE linux configuration
 - Obsoletes aii-nbp
 - No more template

- Default plug-in for osinstall
 - Generator for Kickstart files
 - Obsoletes aii-osinstall
 - No more template
- Supports complex blockdevice combinations
 - Software RAID-1, LVM on top of RAID-x, ...
 - Requires ncm-lib-blockdevices
- Partitioning & formatting file systems
 - Flexible
 - But a bit slower

- KS file: site specific setup
 - Before: hacks in KS template
 - Now: hooks
- Hooks are 'plug-ins' for aii-ks
 - pre-install, post-install, post-reboot
 - Any number possible
 - Configured via Pan structure
 - Community contributions!

- All configuration has changed
 - Backward incompatible...
 - ... but easy to adjust
- Changes:
 - NBP, osinstall configuration
 - File system definitions

- NBP configuration:
 - `/system/aii/nbp/pxelinux`
replaces `/system/aii/nbp/options`
 - Relocation
 - Schema support for compile-time type checking
- Default configuration available
 - Customizable via variables `AII_NBP_GEN`,
`AII_NBP_ROOT`, `AII_NBP_LABEL`

- KS configuration:
 - `/system/aii/osinstall/ks`
replaces `/system/aii/osinstall/options`
 - Relocation
 - Schema support for compile-time type checking
- Default configuration available
 - Customizable via 22 variables `AII_OSINSTALL_*`
 - Mandatory: `AII_OSINSTALL_SRV`,
`AII_OSINSTALL_PATH`

- Hooks:
 - Execute NCM object
 - Print what is desired in KS file
- Example (See aii-hooks(8) for full example):

```
type begrids_hook = {
    "module" : string
    "more_stuf": more_field_types
};
bind "/system/aii/hooks/post_reboot/0" = begrids_hook;
"/system/aii/hooks/post_reboot" = list (
    nlist ("module", "begridd", ...)
);
```

- Separation of file system and block device configuration
 - Requires new pan-templates, ncm-lib-blockdevices
- Block devices configuration:
 - `/system/blockdevices`
- File systems configuration:
 - `/system/filesystems`
- **Obsoletes** `set_partitions()`
- Conversion takes some effort
 - ... but offers more, much more flexibility

```
include quattor/blockdevices;

"/system/blockdevices" = nlist (
  "physical_devs", nlist (
    DISK, nlist ("label", "msdos")
  ),
  "partitions", nlist (
    DISK+"1", nlist (
      "holding_dev", DISK,
      "size", 256,
    ),
    ...
  )
)
```



```
include quattor/filesystems;

"/system/filesystems" = list (
  nlist (
    "block_device", "partitions/" + DISK + "1",
    "mount", true,
    "mountpoint", "/boot",
    "preserve", false,
    "format", true,
    "mountopts", "auto",
    "type", "ext2",
  ),
```

- **Functionality did not change**
 - Format of KS file changed, not contents
- **Command line interface did almost not change**
 - aii-shellfe, aii-installfe, aii-dhcp (for now)
 - Except: --notify was removed
 - ... and there is a request to implement it again!
- **Removed:**
 - aii-osinstall, aii-nbp
- **Support actions:**
 - boot, install, status, configure, remove, rescue, ...

- Pre-requisites
 - CCM \geq 2.0.2
 - pan-templates \geq 2.7.1
 - ncm-lib-blockdevices \geq 0.17
- Packages
 - aii-server \geq 2.0.4
 - aii-ks \geq 1.0.1
 - aii-pxelinux \geq 1.0.0
- Location of configuration files
 - Moved from `/etc` to `/etc/aii/`
 - Only `aii-shellfe.conf` and `aii-dhcp.conf`

- Migrate configuration under
 - `/system/aii/nbp/options`
to `/system/aii/nbp/pxelinux`
 - `/system/aii/osinstall/options`
to `/system/aii/osinstall/ks`
- Check types ... or the compiler will :-)
- Define mandatory variables ... or the compiler will :-)
 - `AII_OSINSTALL_SRV`, `AII_OSINSTALL_PATH`
- Remove traces of
 - `/system/aii/{nbp,osinstall}/options`
 - ... unless you defined plug-ins 'options'

- Replace `set_partitions()` by

- block device setup
- file system setup

Using the schema from `ncm-lib-blockdevices`

- Modules:
 - Alternative to PXE
 - Alternative to KS
- Hooks:
 - Generic, e.g. Sindes, “preserve generated host key”
 - Site-specific
 - Might stimulate others!
- Share enhancements
 - Separate directory: contrib
 - Separate products: **NOT** part of official All release
 - Different maintainers (~ NCM components)

- Read the Fine man pages:
 - `aii(8)`
 - `aii-shellfe(8)`
 - `aii-installfe(8)`
 - `aii-ks(8)`
 - `aii-pxelinux(8)`
 - `aii-hooks(8)`
 - `aii-update(8)`
- `project-quattor@cern.ch`

- All v2:
 - is easy to install / upgrade
 - can do the same (*)
 - is more flexible (*)
 - is easier to maintain (*)
 - helps to find configuration errors
- (*) ... than/as All v1
- Effectively, support for All v1 has been dropped

When will you upgrade?