



Embedding Quattor into the Fabric Management Infrastructure at DESY

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for the DESY Quattor Team

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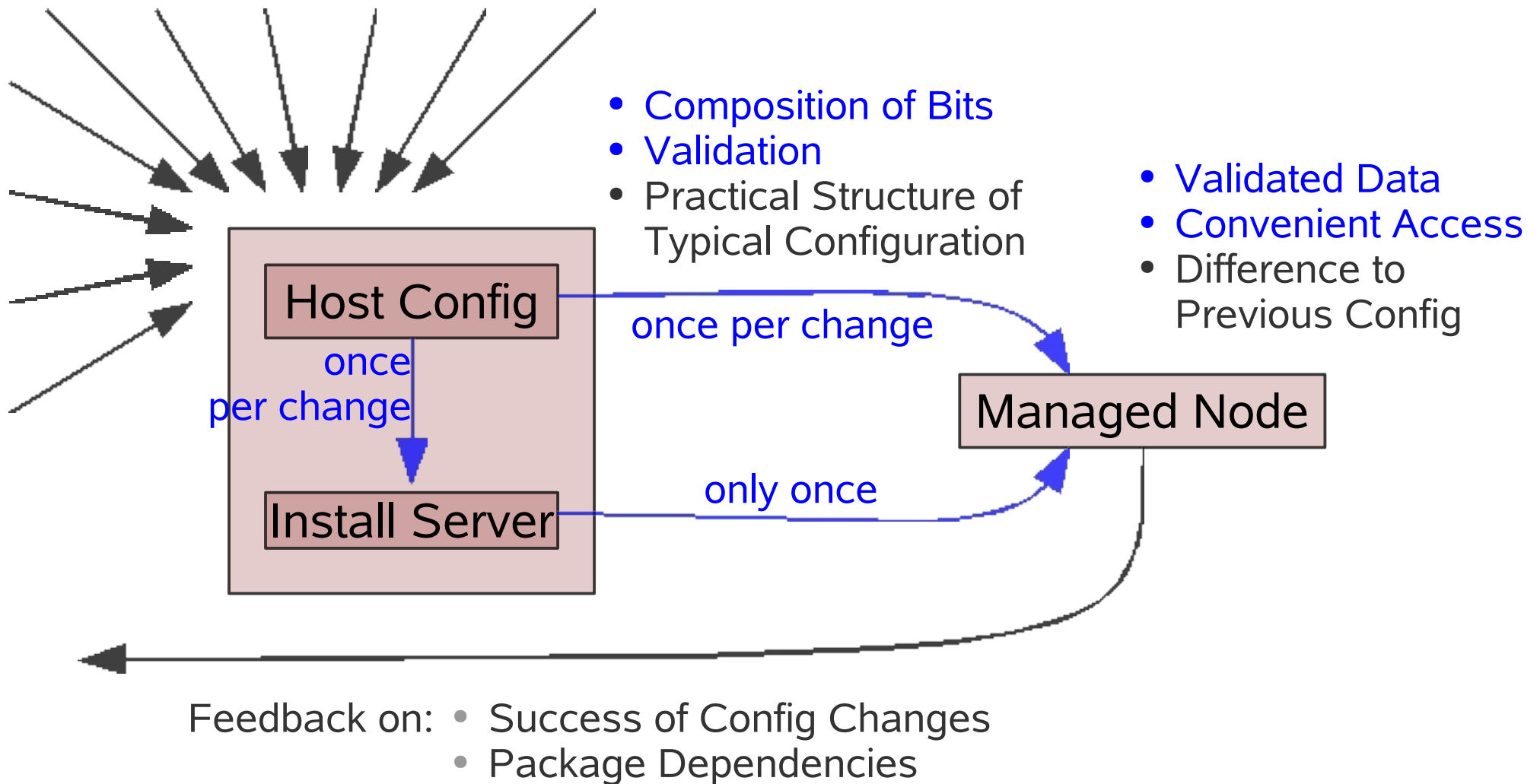
- Renewal of Installation and Maintenance Infrastructure
- Experiences with Existing Tools:
 - Legacy, QIP, AMS, AFS
 - LCFGng for Grid Infrastructure
- Requirements:
 - Scalability for LHC Tier 2 and HERA Tier 0
 - Legacy → Standards
 - Extremely Heterogeneous Current Environment



- Pilot: Grid Infrastructure
 - Quattor 1.0 and LCG 2.4.0
 - LCG-QWG Templates for Worker Nodes
 - YAIM for Service Nodes
 - Ad hoc – making it work as fast as possible
- Upgrade to Quattor 1.1 and LCG 2.6.0
 - New Quattor Server
 - More thorough planning and design



- + Effortless Maintenance of large Number of Nodes
- + Extreme Flexibility (pan Templates)
- + Scalability
- + Unified Description for Installation and Configuration ...
- Instability of Client Daemon (ncm-cdispd)
- RPM Dependencies have do be Solved by Hand
- “Templates” are Node Configurations and Software
- Frequent New Releases are Not Easy to Manage
- Missing Functionality...



quattor Achievements at DESY



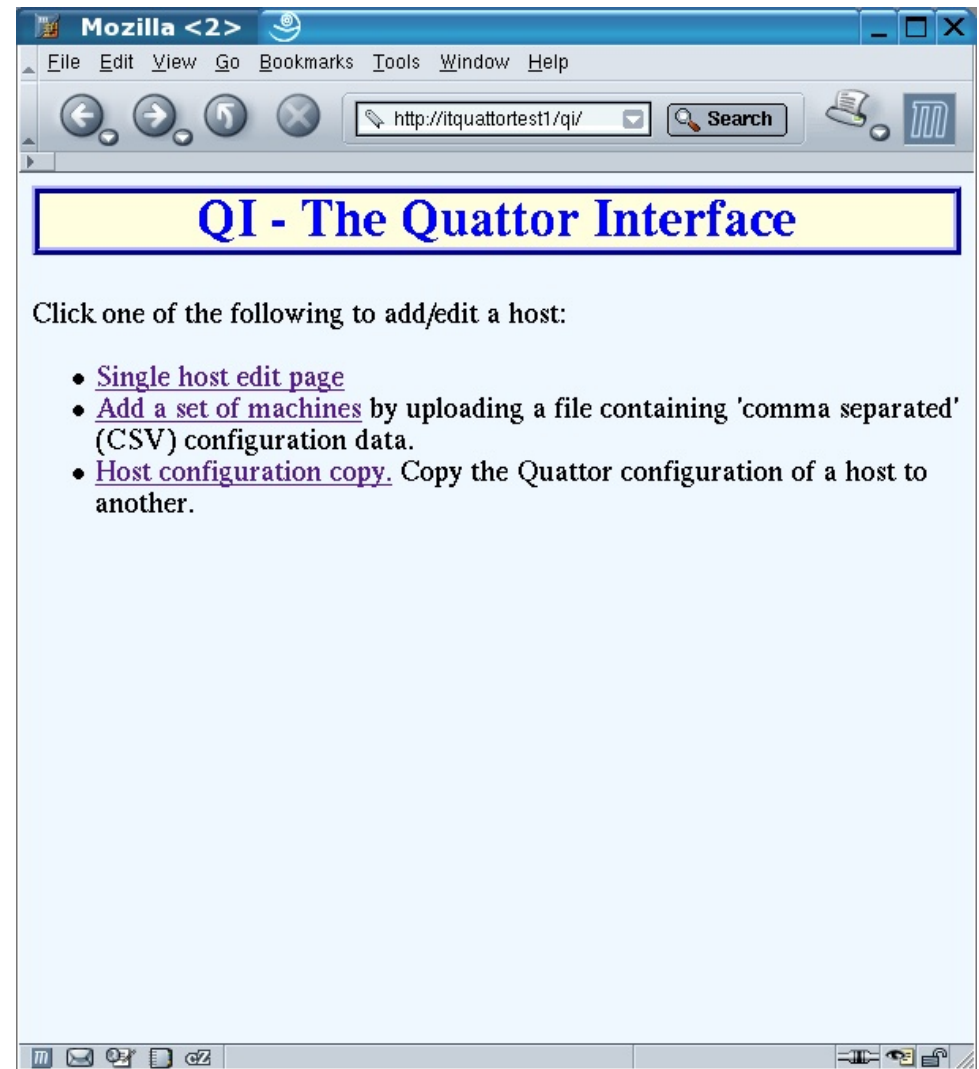
- Standard for Template Structure
- Automatic Generator: **Quattor Interface**
- Management Tools for higher-level Configuration Files
 - CVS (Namespace)
 - **Template Manager**
- Semi-Automatic Upgrade of RPMs
 - Source → Mirror → SWRep → Default List
 - Link to YUM missing
- Tool for Visualization of Inclusion Structure

Use Case:

New Nodes Come into CC

Influences:

- Template Standard
 - Established Infrastructure:
QIP and AMS
 - Established Workflow
- Web Interface for
Operators



Quattor Interface - Mozilla

File Edit View Go Bookmarks Tools Window Help

http://itquattortest1/qi/qi.pl Search

Quattor Interface

User: deriese Version: V 20060103-1-Production

Host Edit Page

Configuration Editor for grid101

Hardware Class	pro_hardware_desy-spc1103
Partitions	pro_configuration_partitions-grid-wn
Maschine Class	pro_mclass_baseserver_i386-sl3
System Class	pro_system_desy_grid-su_wn

Action Items for grid101

Template Action Options	Installation Action Options
<input checked="" type="radio"/> None <input type="radio"/> View template stored in CDB <input type="radio"/> View template defined by this page <input type="radio"/> Create CDB template from this page <input type="radio"/> Update CDB template from this page	<input checked="" type="radio"/> None <input type="radio"/> Show Status <input type="radio"/> (Re-)Install System <input type="radio"/> Remove Install Flag

Commit

Quattor Interface - Mozilla

File Edit View Go Bookmarks Tools Window Help

http://itquattortest1/qi/qi.pl Search

Create CDB template from this page
 Update CDB template from this page
 Remove Install Flag

Commit

External Host Data for grid101		
Field	AMS Value	QIP Value
PCX Number	pcx7446	N/A
Serial Number	S6013P114606538	N/A
User Responsible	gellrich	N/A
User's Phone Nr	2732	N/A
Location	/HAMBURG/2b/131/E51/	N/A
Hostname	grid101	grid101
MAC Address	0030482ACB1C	0030482ACB1C
IP Address		131.169.223.101
Subnet Mask		255.255.255.0
Broadcast Address	N/A	131.169.223.255
Gateway Address	131.169.223.16	131.169.223.16
DHCP Template	N/A	pc_Quattor_test1

The Quattor Interface is brought to you by the Quattor Working Group



Use Cases:

- Updates to Templates from Upstream (Quattor, LCG)
- Keeping CDB, Local Dirs, CVS in Sync
- Validating Profiles w/o CDB Server and finding the Missing Included Files

`cdbop`-like expert tool with additional commands

E.g. `find`: search several CDBs, local directories, web locations for a template name

`diff`: view differences of results of “`find`”

```

$ tplmgr
[tplmgr] find pro_declaration_functions_general

Nr |Repository                |Ver. |Subdirectory in Repository |Comments
---+-----+-----+-----+-----+
1  |Current CVS Working Directory |1.2.9|/declaration/              |
2  |Desy Quattor Test CDB         |1.2.9|                            |Same as: 1
3  |Quattor 1.1beta-6 Repository  |1.2.7|/standard/                  |
4  |Quattor 1.1 Repository        |1.2.9|/standard/                  |Same as: 1

[tplmgr] diff 1 3

5c5
< # VERSION: 1.2.9
---
> # VERSION: 1.2.7

[tplmgr] exit
$

```

- Quattor Integration at DESY a Success
- A Standard for Configuration Files is Essential
- Our Site Integration may be Model for other Sites (QI)
- Use-Cases for advanced Quattor Admin (tplmgr)
- Still Needed:
 - Namespaces are essential for a Maintainable Service
 - Help with RPM Upgrades respecting Dependencies
- Managing Fabrics without Continuous Reinstalls is Worth the Effort