

WLCG Operations TEG – WG3

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- Three areas of WG3
 - Software Management
 - Configuration Management
 - Deployment Management
- One slide per area for
 - Improvement Areas
 - Potential efficiency gains

The logo consists of the letters 'ES' in a bold, white, sans-serif font, positioned on a dark blue background.

Experiment Support

CERN IT
Department

Software Management



Impact	Area
5	<u>Integration of grid middleware clients into experiment software stack</u> The need for integrating grid middleware clients arose b/c experiments wanted to have a faster turnaround for these package deployments.
3	<u>Duplications in the experiments common software stack</u> Experiments “common software” (e.g. Boost, Python, etc.) are being used with the same versions, still being deployed individually to sites.

(Impact: 10 – Preventing operations; 5 – significant waste of effort; 1 – inconvenient)

- Faster turnaround for grid middleware
 - Eg. deployment in a virtual machine with contextualization
 - Experiments would not need to integrate the clients into their software stack anymore
- More integration of common software after agreement on common software stack
 - One deployment of “common software stack”
 - No need to redeploy packages n times

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Experiment Support

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Configuration Management



Impact	Area
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8	<u>“Hammering” of common site software area</u> Tools for the experiments runtime environment setup and their underlying configuration management tools are creating sometimes heavy load on the sites shared sw area during runtime environment setup. The problem being also the underlying package infrastructure which is deployed “tree like”
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3	<u>Many individually developed configuration and build tools</u> Because of former needs to configure and build on multiple platforms experiments have developed their own tools. Nowadays tools are available outside HEP that could be used.
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(Impact: 10 – Preventing operations; 5 – significant waste of effort; 1 – inconvenient)

- Flat software deployment (one /bin, /lib, /man) directory
 - Would reduce the load for runtime env. setup
- Potential for common build tools
 - Currently Cmake being investigated
 - Several advantages over current tools



ES

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Deployment Management

Impact	Area
5	<u>Lot of manpower into exp software deployment</u> <ul style="list-style-type: none">• Maintenance of the experiment shared software area• Librarians need to maintain packaging / deployment for different systems• Individual software deployment teams with experiments• Many individual systems have been developed
5	<u>CVMFS not on all sites</u> <p>Experiments that are using already CVMFS need to maintain another additional deployment system</p>
4	<u>Package removal at sites shared software areas</u> <p>It's not always clear which software versions are still in use (e.g. user analysis), therefore removal of obsolete packages is not straight forward. (Software Popularity System?)</p>

(Impact: 10 – Preventing operations; 5 – significant waste of effort; 1 – inconvenient)

- Agree on one common software deployment tool and process between all experiments
 - Reduces LHC librarians work
 - In case of centrally managed distributed filesystem, reduces load on experiments deployment teams
 - In case of already existing tool, sites can copy / paste already existing infrastructure