



CD FY10 Budget and Tactical Plan Review

**FY10 Tactical Plans for
*Computing Infrastructure (CD Business Apps & CD Infrastructure Apps)***

Computing Infrastructure (CD Business Apps & CD Infrastructure Apps)	3426

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FY10 Tactical Plan for ECS/Computing Infrastructure

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Service Activity List

- CD Business Applications
- Computing Infrastructure Applications

Project Activity List

- Modernizing Infrastructure Apps
- Network Programming Apps
- MISCOMP
- NIMI Development
- Data Warehouse Implementation
- Automated Test Suite
- Indico Development
- CD Process Accounting

Service Activity: CD Business Applications

- **Goals Related to this Activity**

- Provide robust, stable and secure CD business applications
 - Budget input and DB support
 - Leave Request
 - Procurement (MISER)
 - Indico
 - DocDB
 - Workflow Package
- Maintain system reliability
- Document service environment.
- Re-assess environment, with an eye toward modernizing where appropriate.

- **Key Metrics**

- Service Uptime
- Service Request Response time

- **Service Documentation**

- Not developed yet ... see Goals above.

- **Issues and Risks**

- Lack depth and coverage of critical systems
- Cross training difficult ... perl, python, Visual Basic, Django, ZODB, Oracle, MS Access, Zope, Plone, Access etc.... A grab bag of technologies and applications.

Service Activity: Computing Infrastructure Applications

- **Goals Related to this Activity**
 - Provide robust, stable and secure CD infrastructure applications
 - EquipDB
 - CD Process Accounting
 - NIMI and Network Applications
 - MISCOMP
 - Maintain system reliability
 - Document service environment.
 - Re-assess environment where appropriate
- **Key Metrics**
 - Service Uptime
 - Service Request Response time
- **Service Documentation**
 - Not yet developed, see goals above.
- **Issues and Risks (specific to this activity, includes allocation impact)**
 - Technical staffing issues to support such a wide range of products (python,perl,VB,java, Oracle, postgres, mysql, ZODB, Django, Zope, Plone ...) and having suitable depth of knowledge for emergency coverage.

Project Activity: Modernizing Infrastructure Apps (DNS appliance support)

- **Goals Related to this Activity**
 - Support for new DNS appliance with MISCOMP.
 - Infoblox (or some similar appliance) is required to support DNSSEC as mandated by the DOE.
 - Improve latency between node registration and DNS loads
 - Currently scripts running 1x per day to load DNS. Opportunities may exist to do the DNS load in real time as a user registers.
- **Key Milestone**
 - Implementation of DNS appliance (Network Services)
 - Implementation of software to share DNS information between MISCOMP and the appliance.
- **Project Documentation:**
 - <http://cdorg.fnal.gov/dbi/projects/miscomp/index.xml>
- **Issues and Risks**
 - Many unknowns:
 - How is information loaded into the appliance?
 - Does the DNS information flow from the appliance into MISCOMP? If so, this is a *major* architectural change.
 - DNSSEC has a 2010/01/01 deadline, how do we install the appliance without proper changes in MISCOMP?
 - This is a high priority project and will require coordination and planning with the Network Services group. We are just beginning this process.

Project Activity: Networking Programming Applications

- **Goals Related to this Activity**

- Develop software to support new network appliances as needed.
- Develop data collectors
 - DHCP, VPN and Subnet needed to support new appliances
 - ARP, Switch being redesigned for real time requirements
- Implementation of Solarwinds network management software (<http://www.solarwinds.com>)
 - Configuration
 - Development of bridge software to feed ARP table data into the NIMI infrastructure.
- Development of interface to support IP blocking at edge routers
 - Facilitate DOE mandated requirement of utilization of “Federated” list of suspect IP’s for blocking

- **Key Milestones**

- Implementation of DHCP collector by end of calendar year 2009.
- Solarwinds implemented and support software deployed.

- **Project Documentation:** <http://cdorg.fnal.gov/dbi/projects/NIMI/index.xml>

- **Issues and Risks**

1. Solarwinds learning curve... training course would be worthwhile.
2. Solarwinds API is Visual Basic where we will have to develop expertise.
3. Coordination with Network Services group with implementation of Solarwinds and Federated list.
4. Implementation of Federated list is a DOE mandate and has been identified as a high priority.

Project Activity: MISCOMP (server upgrade)

- **Goals Related to this Activity**

- Replace application production server(appora) and development server(appora-dev).
- Move python based applications (FTL reporting, various quality assurance tools) from machines we do not own to these new servers.
- Allow for the development of new applications in python based technologies (Django).
- Cross training

- **Key Milestones**

- Purchase of server
- Installation of current appora applications
- Installation of FTL reporting and quality assurance tools (Python based software).

- **Project Documentation:** <http://cdorg.fnal.gov/dbi/projects/miscomp/index.xml>

- **Issues and Risks**

- Current OS is out of date and does not allow for the installation of python 2.4 causing several problems:
 - FTL is Python 2.4/Django based is running on dbweb01 (not our machine)
 - Various quality assurance python based tools are also running on dbweb01 and must be moved.
 - Inability to take advantage of technologies such as Django and Ruby on Rails for new development.
- Hardware nearing end of life (moved into production 2005/02/01)
- Cross training is essential

Project Activity: NIMI Development

- **Goals Related to this Activity**

- Implementation of issue based exemptions
 - Development of baseline detectors have magnified the need for implementation of exemption list with workflow. Can not rely on manually maintained files for white list. Must coordinate with TuneIT Up activities.
- Implementation of monitoring tools
 - Many problems are discovered “by accident” (i.e. the Sunday Problem).
- Continued cleanup and moving away from Zope toward Django technology when possible (FCIRT Event Injection tool for example)
 - Tissue 2.0?
- Extending nimrod functionality to Accelerator Division.
- Extending wism functionality to Accelerator Division.

- **Key Milestones**

- Rollout of issue based exemptions.
- Rollout of nimrod to the Accelerator Division.
- Rollout of monitoring tools

- **Project Documentation:** <http://cdorg.fnal.gov/dbi/projects/NIMI/index.xml>

- **Issues and Risks (specific to this activity, includes allocation impact)**

1. Continuing with manual white/black lists error prone and could result in exemptions that never expire (i.e. forget to remove the name from the file)
2. Must coordinate and work with TuneIT Up to avoid duplicating effort and not colliding with efforts for exemptions.
3. Monitoring could suffer from scope creep.
4. Coordination with AD for nimrod rollout. WISM rollout would probably require purchase of WISM controller.
5. Aging hardware.

Project Activity: Data Warehouse Implementation

- **Goals Related to this Activity**
 - Support data warehouse by implementing processes and procedures
 - Support data warehouse by implementing ETL (Extract/Transfer/Load) tool
- **Key Milestones**
 - Build prototype data warehouse
 - Identify and define procedures and policies for data warehouse use
 - Implementation of ETL tools
- **Project Documentation:**
 - Not yet defined
- **Issues and Risks**
 - Scope of project still being defined, potentially a *very* large development effort spanning several groups and departments.

Project Activity: Automated Test Suite Development

- Goals Related to this Activity
 - Reduce time and effort required to test system changes, new product implementations ...
 - Provide ability to load and/or stress test systems.
 - Improve quality control.
- Key Milestones
 - Product investigation and selection
 - Implementation
 - Training
 - Rollout
- Project Documentation: Not defined yet.
- Issues and Risks
 - Reduced quality control
 - Increased resource utilization to complete testing in a timely fashion.

Project Activity: Indico Development

- **Goals Related to this Activity**
 - Implement authentication module to support service accounts
 - Participate in the planned collaboration team being organized at CERN, using opportunity to identify and implement features important to Fermilab.
- **Key Milestones**
 - Implementation of module to allow the use of service accounts.
 - Collect Fermi specific requirements and present to CERN for inclusion in production releases.
- **Project Documentation:** <http://cdorg.fnal.gov/dbi/projects/indico/index.xml>
- **Issues and Risks**
 - Implementation of authentication plugin is not supposed to be difficult but is not documented. Will rely on CERN development team for advise.
 - Participation in collaboration is a way to be a “good citizen” as well as get help where we need it (see above) and features important to Fermilab in production branch.

Project Activity: CD Process Accounting

- **Goals Related to this Activity**
 - Implement CD specific requirements identified in FY09;
 - CD-doc-3191-v1: CD Accounting Requirements
 - CD-doc-3231-v1: Comparison of Gratia Feature Set and CD Accounting Requirements
- **Key Milestones:**
 - Implementation of extensions in Gratia to support CD requirements.
- **Project Documentation:** <http://cdorg.fnal.gov/dbi/projects/CDAccounting/index.xml>
- **Issues and Risks**
 - Given other projects staffing this project at the moment is not feasible. Hiring of a java programmer is recommended to get this project rolling.
 - Collection of requirements are still very vague in some cases.
 - Several false starts with this project, is this another one?

Ripple Effect on Shared IT Services



- Event-based exemptions could have impacts on TuneIT Up campaign.
- Nimrod functionality extended to AD will require coordination with Accelerator Division
- Miscomp changes to support DNS appliance could have impacts to entire lab.
- Require services from other groups (DB) and possibly other departments
- Must continue to work closely with Network Services group.
- Sysadmin support

FY10 FTE and M&S: Request vs. Allocation

Level 0/1 Activity: [ECS/Computing Infrastructure](#)

Activity Level 2	Project or Service	Project Priority	FY10 FTE Request At Activity Level 2	FY10 M&S Request At Activity Level 2	FY10 FTE Allocation At Activity Level 2	FY10 M&S Allocation At Activity Level 2
CD Business Applications	Service	High	1.35	4000	0.15	0
Computing Infrastructure	Project	High	6.7	218192	0.2	0
Total			8.05	\$222,192	8.05	\$222,192

Impact of Preliminary Allocation

- If allocation meets request then we will be able to accomplish core mission...
- If allocation does not meet request, then we may not be able to accomplish core mission ... but we will still try.

Summary of Past Action Items

- **ITIL Implementation**
 - Release management process defined for most projects.
 - Managers ITIL certified.
- **Resource Accounting**
 - Requirements gathered.
- **Development/support of NIMI applications**
 - Baseline detectors
 - Network verification collector
 - FCIRT Event Injector Tool
- **Indico**
 - Various registration module enhancements
- **Budget Input Conversion (→ Oracle)**
 - Not complete.
- **Effort Reporting Conversion**
 - Complete
- **Content Management System (replacement)**
 - Some research when looking at solutions for RF Cavity people but essentially not completed.

Tactical Plan Summary

- MISCOMP mods to support DNS appliance
- Appora and appora-dev replacement – high priority
- Must support Federated List – IP blocking at edge router
- Exemption based system in NIMI to support baseline detector development – coordinate with TuneIT Up.
- CD Process Accounting is in danger of stagnation.
- Implement service accounts in Indico + other desired features.
- Development of automated test suites where appropriate
- Data warehouse will be a large effort across multiple groups/depts.
- Cross training essential but difficult with a wide range of technologies in use.
- Must work closely and keep communication open with Network Services group.