	Issuing Department UIS	Topic UIS Change Approval and Management Procedures	Policy # 301.2
	<i>Revised</i>	Supersedes Policy # 301, Policy Title: UIS Outage and Management Procedures, October 2004	Effective Date June 22, 2006

001.0 PROCEDURE

UIS CHANGE APPROVAL AND MANAGEMENT PROCEDURES

001.1 STATEMENT

Change Approval and Management Procedures are designed to provide a process for requesting approvals and managing changes on production services within UIS. In addition to these procedures, divisions within UIS may have specific requirements.

001.2 PHILOSOPHY

Change Control is an internal control procedure by which only authorized amendments are made to our software, hardware, network access privileges or business processes.

001.3 RESPONSIBILITY

All members of UIS are responsible for following the guidelines outlined in the procedure. It is the responsibility of the UIS Change Control Coordinator to ensure the communication of this procedure to all UIS employees.

001.4 RESOURCE

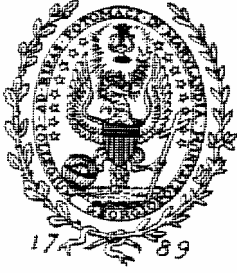
Contact the UIS Change Control Coordinator if there are any questions regarding the procedures outlined.

001.5 PROCEDURES

Definitions

Change: To alter or modify the current validated run-time characteristics of a system or service. Examples of changes to systems include but not limited to, hardware upgrades/maintenance, OS upgrades/maintenance, application code changes, ACL changes, non-trivial content that may affect the run-time demands of the infrastructure.

Change Control: A program that ensures a validated system remains validated by recognizing and addressing the potential impact of a change to the system.

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Application Steward: UIS performs work on behalf of application stewards who are outside of UIS. If the application steward is expected to do any work as part of the change, he/she is expected to be onsite with the Change Manager or in his/her office to perform the work even if the work could be performed from a remote location.

Change Control Coordinator: The person assigned to approve all changes and exceptions. This is the Associate Director of NCS or in his/her absence, the Director of NCS or his/her designate.

Change Manager: The person responsible for managing the change. This person must also manage the onsite activity and must be at the same location, unless an exception is granted at the time of the approval. This person is usually the Team Leader, Group Leader or Manager of the team responsible for the change. Change Managers will be approved by the each division director and complete a Change Manager Certification.

Change Manager Certification: Certification process required for all persons identified as Change Managers and must be completed prior to being assigned to manage on-site outages. *See Change Manager Certification procedures.*

Change Notification List: is UISOPS-L@georgetown.edu, the e-mail alias for notifying support staff and others involved in the change

Change Owner: The Director or Manager who has oversight of the service and is responsible for submitting the change request to UIS Change Control.

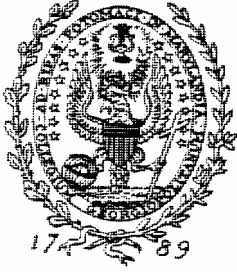
User Services Coordinator: The person assigned to ensure communication with affected users. This is the Manager, UIS Help Desk or his/her designate.

Scheduled Outage: A change that is planned, falls completely within the scheduled outage window, is performed on a production system and **will** disrupt service(s). A Script and Change Control Approval is required.

Scheduled Work: A change that is planned, falls completely within the scheduled work window and is performed on a production system and should not but has the potential to disrupt service(s). A Script and Change Control Approval is required.

Extended Outage: A change that is planned, extends beyond the scheduled outage window, is performed on a production system and will disrupt service(s). A Script and Change Control Approval is required.

Emergency Outage: A change that requires immediate action before the next scheduled outage

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window and is required to address critical issues such as installation of critical security patch, to resolve known patterns of system deterioration, or to address virus patches or system compromise.

Unscheduled Outage: An outage due to an unexpected system failure.

I. Process for planning and performing Scheduled Outages, Scheduled Work and Extended Outages

1. Regular Scheduled Outage Windows

All changes to production systems must occur during these windows.

The Qatar location is seven hours ahead of the DC location during Eastern Daylight Time (EDT) and is eight hours ahead of the DC location during Eastern Standard Time (EST).

Washington, DC Location

		<u>EDT</u>	<u>EST</u>
▪ Mon	5:00 AM to 8:00 AM ET	(12:01 PM to 3 PM Qatar Time)	(11AM to 2 PM Qatar Time)
▪ Tue	5:00 AM to 8:00 AM ET	(12:01 PM to 3 PM Qatar Time)	(11AM to 2 PM Qatar Time)
▪ Wed	5:00 AM to 8:00 AM ET	(12:01 PM to 3 PM Qatar Time)	(11AM to 2 PM Qatar Time)
▪ Thu	5:00 AM to 8:00 AM ET	(12:01 PM to 3 PM Qatar Time)	(11AM to 2 PM Qatar Time)
▪ Fri	5:00 AM to 8:00 AM ET	(12:01 PM to 3 PM Qatar Time)	(11AM to 2 PM Qatar Time)
▪ Sat	6:00 AM to 9:00 AM ET	(1 PM to 4 PM Qatar Time)	(12:01 PM to 3 PM Qatar Time)
▪ Sun	6:00 AM to 10:00 AM ET	(1 PM to 5 PM Qatar Time)	(12:01 PM to 4 PM Qatar Time)

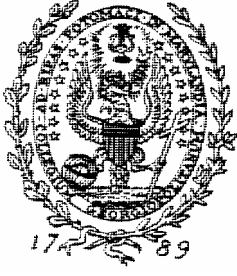
Doha, Qatar Location

▪ Sun	7 PM to 9 PM Qatar Time	(12:01 PM to 2 PM EDT WDC)	(11 AM to 1 PM EST WDC)
▪ Tue	7 PM to 9 PM Qatar Time	(12:01 PM to 2 PM EDT WDC)	(11 AM to 1 PM EST WDC)
▪ Thu	7 PM to 9 PM Qatar Time	(12:01 PM to 2 PM EDT WDC)	(11 AM to 1 PM EST WDC)
▪ Fri	7 PM to 9 PM Qatar Time	(12:01 PM to 2 PM EDT WDC)	(11 AM to 1 PM EST WDC)

2. Scheduled Work Window

Washington, DC Location

- Daily (Monday through Sunday) from 8 AM to 9 AM ET Time
 - (4 PM to 5PM Qatar Time EST), or
 - (3PM to 4PM Qatar Time EDT)

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Doha, Qatar Location

- Daily (Monday through Sunday) from 8 AM to 9 AM Qatar Time
 - (12:01 AM to 1 AM EST), or
 - (1 AM to 2 AM EDT)

Note: In 2006 Eastern Daylight Time (EDT) began on the first Sunday in April, (April 2, 2006), and changes back to Eastern Standard Time (EST) on the last Sunday in October, (October 29, 2006). Beginning in 2007, EDT will begin on the second Sunday in March, (March 10, 2007) and change back to EST on the first Sunday in November (November 3, 2007).

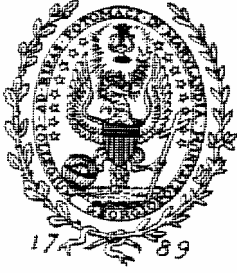
3. Script Requirements

All changes to production systems require a script that details the work to be done, by whom and in what order. The script must be adequately detailed and include a back-out plan and it must identify specific points where there is no turning back. The script must have been tested in a non-production environment, whenever possible, before being submitted, and it must explicitly indicate any steps that have not been tested. This includes scheduled outages and scheduled work.

Acceptable formats are HTML, ASCII text and Word Documents. Documents containing images such as screen shots should be avoided due to their size and difficulty of handling, unless they are the most compact way to display a “set” of settings for example, from a GUI. Actions that require use of a GUI may be listed as a series of steps (“Select option 1”, “Select option 2”, etc.). The document should be in format that can be printed on a standard B&W LaserJet printer.

The script should be written so that someone who is familiar with the system can perform the change without assistance from the author. This includes a detail of:

- Which account to use at login (passwords should **not** be included in the script)
- What shell scripts (including path) that specifically need to be run
- A summary of output (if any) that is expected to be generated by the commands
- What to do in the case of errors
- If the change includes a server reboot, what specific command should be used to shutdown the server and what command (or action) should be done to restart
- Specific detail on any text that needs to be changed
- List each command in the sequence it will be entered
- For GUI interfaces, identify each option to be selected

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- *Application Stewards* must include their specific test plans

4. Opportunistic Activities

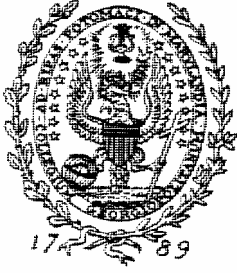
Opportunistic activities are “unscripted actions” which occur as “good ideas” at the time of the change but were not planned for. These include server reboots, addition or removal of hardware in a server, new drivers or other activities that may be opportune during the approved change window. These activities must be scheduled for another change with a complete script developed and approved. Once the change is underway, the work cannot deviate from the script without the express approval of the *Change Owner*.

Minor corrections such as for syntax errors are permitted but the scope of work cannot be increased nor are opportunistic activities previously omitted from the approved script permitted.

5. Approval by the Change Owner

The *Change Manager* is required to gather detailed information about the work to be accomplished. Once the script and all documentation has been gathered, the *Change Manager* must have approval and sign off from the *Change Owner* before proceeding to the next step.

- A brief description of and the need for an change
- Identification of an Application Steward (if applicable)
- A list of the services and equipment that will be affected
- A list of the people who are involved in the change and the specific physical location of each person during the change.
- The specific time of the change
- A detailed script including a back-out plan
- The specific location that the work will be performed
- Name of the Change Owner and his/her approval
- Indicate pre-production testing of the script
- Indicate if work is non-trivial requiring the attendance of the Change Owner.
- Indicate that the application steward was asked to be on site when/where appropriate.
- Indicate that all system documentation has been updated (e.g. SIA, on-call, Change Log, etc.)
- Indicate whether system documentation related to new procedures has been updated as a result of the change

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6. Approval by the Change Control Coordinator.

Once the Change Owner has approved, the Change Manager must then request approval from the *Change Control Coordinator*. If the Coordinator does not approve, the change is cancelled. All decisions by the *Change Control Coordinator* are final.

7. Advance Notification

The Change Control Coordinator must be given adequate time to review the details and the scripts for completeness and work with the *Change Manager* on any changes that are necessary. The schedule for advance notification is

- All scheduled, non-emergency requests including Scheduled Outages, Extended Outages and Scheduled Work require at least three (3) business days notice to UIS Change Control
- Enterprise systems may require additional time to ensure adequate notification to user community

Requests that don't meet the minimum advance notification deadline may not be approved.

8. Change Notification

After the change has been approved by the *Change Control Coordinator*, the *Change Manager* will send a short e-mail to the *Change Notification List(s)* stating the details of the change as listed above.

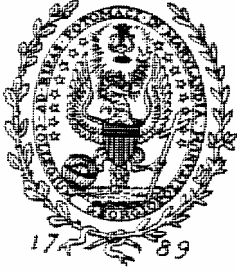
9. User Notification

The *User Services Coordinator* is responsible for informing the user community before and after the change.

10. Change Management

The *Change Manager* and all people listed as being on site during the change must be present at the same location and for the full duration of the change, ***unless an exception is granted at the time of the change approval.***

Work that is deemed non-trivial, high risk, complex, or impacts multiple services may require the presence of the *Change Owner*. The *Change Control Coordinator* will make

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the determination based on the information provided and will notify the *Change Manager* at the time of approval. If the *Change Owner* is required to be on site and is not available, the change is cancelled.

The Change Manager is responsible for asking an active participant *Application Steward* to be onsite during the change. If the Steward cannot be onsite, for whatever reason, this fact should be noted in the script that is submitted for approval.

11. Change Completion Process

The *Change Manager* must complete a follow up report to the Change Notification List(s) at the end of the change. The follow up report may be a simple e-mail reply to the change notification and must include;

- the actual time and duration that services were affected
- an explanation of any unexpected problems or delays encountered

The *Change Owner* has a responsibility to file a detailed report of *unscheduled outages* that exceed one hour in duration to the *Change Control Coordinator* within one business day of the event. The *Change Control Coordinator* may request the *Change Owner* file a report for other changes as needed.

12. Request for Extended Outage

The *Change Manager* may request an *Extended Outage* if there is a compelling business reason to extend beyond the scheduled outage window. The request will not be approved simply even if users are willing to lose access or will be unaware of the outage. Staffing constraints are not sufficient reason to request an exception to the outage window. An example of a compelling business reason is an outage that could not be completed within the schedule time frame (e.g. greater than 3 hours).

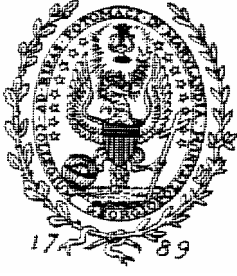
II. UNSCHEDULED & EMERGENCY OUTAGE PROCESS

New procedures are being developed for reporting and managing emergency outages and will be documented in an Unscheduled Outage Procedures Document.

1. Unscheduled Outage Use Current Escalation and On-Call Notification Process

- <https://data.georgetown.edu/uis/intranet/oncall/>

2. Request for Emergency Outage

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The *Change Manager* may request an *Emergency Outage* if there is a compelling reason to perform work before the next available scheduled outage window.

Requests for an Emergency outage must be approved by the *Change Control Coordinator*.

III. Change Manager Certification

1. All staff identified to act in the role of “Change Manager” must complete a certification process. *The certification process has not been developed at this time, the interim process follows.*
2. Interim Process
 - a. Each UIS Division Director will identify and approve Change Managers from their respective area.
 - b. Each Change Manager will acknowledge by memorandum that they have read and accept the current Change Approval Management Procedures.

Enforcement

Violations of this policy will be handled consistent with University disciplinary and performance evaluation procedures applicable to the relevant persons or departments.

Approval History

UIS Executive Committee

Review Cycle

This procedure will be reviewed and updated as needed, at least annually, based on the recommendations of the UIS Executive Committee.