Change Management

Computing and
Telecommunications Services

Agenda

• Overview
• Definitions
• Types of Changes
• Risk Assessment
• Process
• Using ServiceNow
Overview

Definitions

• Change
  – The addition, modification or removal of anything that could have an effect on IT services.
  – Includes, but not limited to:
    • Hardware (e.g., servers, switches, phones, projectors, printers, etc)
    • Software (e.g., installing/upgrading/removing software from a server, "Patch Tuesday")
    • Code (e.g., making changes to application code)
    • Cabling
    • Applications (e.g., upgrading to Banner 9, deprecating DARS, ServiceNow upgrade to Kingston, etc)
    • Services (e.g., Home Base, Help Desk)
Definitions

• Change Management
  – The process responsible for controlling the lifecycle of all changes, enabling beneficial changes to be made with minimum disruption to IT services. (ITIL ST, 306)

Definitions

• Change Advisory Board (CAB)
  – A body that exists to support the authorization of changes, and to assist the change management process in the assessment, prioritization, and scheduling of changes.
  – Approval must be unanimous
Definitions

- Change Advisory Board (CAB)
  - Standing meeting Wednesdays @ 2pm
  - May get rescheduled depending on schedule conflicts
  - Standing members:
    - Change Manager (Jonathan Jackson)
    - Chief Information Security Office (Mike Natale)
    - Director, Client Services (Kenny Coon)
    - Director, Information Services (Michael Stankas)
    - Director, Technical Services (Larry Fox)
    - Manager, Service Desk (Reid Allen)
    - Individual performing each Change on the agenda
      - Change Coordinator
    - Others as deemed necessary

Definitions

- Emergency Change Advisory Board (eCAB)
  - Subset of the CAB responsible to review Emergency Changes, generally on an ad hoc basis, possibly virtual.
  - Emergency Changes require approval from Director-level or higher.
Types of Changes

<table>
<thead>
<tr>
<th>Types of Changes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Change</td>
<td>Any change that is not a routine change or an emergency change. These types of changes do not have a pre-authorized/pre-approved procedure or work instruction, are not routinely performed, or are not considered low risk. Normal Changes must be approved by the CAB each time they are performed. Example: Voicemail system upgrade, Upgrade to Banner 9</td>
</tr>
<tr>
<td>Emergency Change</td>
<td>A change that must be implemented as soon as possible, either to resolve a major incident, prevent a major incident, or to mitigate a security vulnerability.</td>
</tr>
<tr>
<td>Routine Change</td>
<td>A pre-authorized change that is low risk, relatively common, and follows a procedure or work instruction previously approved by the CAB. Example: Firewall policy changes, add/move a printer</td>
</tr>
</tbody>
</table>

When is a Change a Change?

• Question usually comes up regarding very low risk Routine Changes

• If what you’re doing changes:
  – Consumption
  – Use
  – Function

• It is a Change
Risk Assessment

Dependencies + Impact + Priority + Scope = Risk Level

<table>
<thead>
<tr>
<th>Value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependencies</td>
<td>Change can not be backed out, or testing/validation must be performed on production services.</td>
<td>Complex implementation or validation/testing; or required extended change window, or change exceeds 2.0 hours in length.</td>
<td>Moderate implementation or validation/testing.</td>
<td>Change is easily validated or backed out.</td>
</tr>
<tr>
<td>Impact</td>
<td>Affects all services, servers, and/or networks.</td>
<td>Affects services, servers and/or networks of multiple departments/buildings.</td>
<td>Affects services, servers, and/or networks of a single department/building.</td>
<td>Services, servers, and/or networks will be usable during the change.</td>
</tr>
<tr>
<td>Priority</td>
<td>Service outage for major systems.</td>
<td>Service outage for critical systems.</td>
<td>Service outage for a non-critical system.</td>
<td>No service outage is expected.</td>
</tr>
<tr>
<td>Scope</td>
<td>75% or more users will be affected.</td>
<td>50-75% of users will be affected.</td>
<td>25-50% of users will be affected.</td>
<td>Less than 25% of users will be affected.</td>
</tr>
<tr>
<td>Higher risk</td>
<td>Lower risk</td>
<td>Lower risk</td>
<td>Lower risk</td>
<td>Lower risk</td>
</tr>
</tbody>
</table>

Risk Level

- 4-8: High
- 9-12: Medium
- 13-16: Low

Deadline for Change Submission

<table>
<thead>
<tr>
<th>Change Deadline</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Level</td>
<td>Deadline</td>
</tr>
<tr>
<td>1 - High</td>
<td>4 CAB meetings prior to planned start date.</td>
</tr>
<tr>
<td>2 - Moderate</td>
<td>2 CAB meetings prior to the planned start date.</td>
</tr>
<tr>
<td>3 - Low</td>
<td>1 CAB meetings prior to the planned start date.</td>
</tr>
</tbody>
</table>
Periods of Minimal Changes

- We are not calling these “blackout windows”. Changes can still occur during these times.
- Changes occurring during times that are critical to the business of the university will receive additional scrutiny; and the CAB may require they be performed outside of these times.
- Flexibility is key. Want to avoid increased risk, but still permit necessary changes.

<table>
<thead>
<tr>
<th>Periods of Minimal Changes</th>
<th>Begins:</th>
<th>Ends:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning of the Semester</strong></td>
<td>12:01am on the day 1 week prior to the first day of Fall or Spring semester</td>
<td>11:59pm on the day 1 week after the first day of Fall or Spring semester</td>
</tr>
<tr>
<td><strong>End of the Semester</strong></td>
<td>12:01am on the day 1 week prior to the start of finals week</td>
<td>11:59pm on the day of the final grade submission deadline, as determined by the Office of the Registrar.</td>
</tr>
</tbody>
</table>
Maintenance Windows

• Changes should be performed at the following times:
  – Every Tuesday: 5:30am - 7:30am
  – First Sunday of each month: 6:00am – Noon
  – Second Sunday of each month: 6:00am – Noon

• The CAB may authorize changes to occur outside of a maintenance window if it is deemed necessary.
• The CAB may authorize Routine Changes to be performed at times other than the defined maintenance windows, including authorizing Routine Changes to be performed at the discretion of the Change Coordinator.
Change Record

• All Changes recorded in ServiceNow

Normal Change

Number: Ch1234567890

Category: Telecom

Configuration Item: General IT Service

Planned Start Date: 2018-02-08 08:00:00 AM

Planned End Date: 2018-02-08 08:00:00 AM

Reason: Other

Impact: Medium

Risk: Low

Priority: Low

Scope: Large

State: Scheduled

Type: Normal

Assignment Group: Telecommunications

Assigned To: Matt number

Short Description: Upgrade campus voicemail system

Description:

Telecom to upgrade from legacy Nortel Nortel voice mail system to NCS VMAIL.

Communication draft: https://dev.technicalsupport.wright.edu/personnel/joshua_jackson@wright.edu/telecommunications/Upgrade_voicemail/telecom_voicemail_upgrade.docx

Justification:

- Lower costs to Telecom dept.
- Consolidation of service/totals by moving from a Nortel system to an NCS system

Test Plan:

Both the current and new system are running in tandem right now, with a pilot extension/V2 setup for testing. CAFE is piloting the new system on volunteer basis.
Change Record

Normal Change

<table>
<thead>
<tr>
<th>State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>Change has not yet been submitted</td>
</tr>
<tr>
<td>Scheduled</td>
<td>Change has been approved and is on the schedule</td>
</tr>
<tr>
<td>Assess</td>
<td>Change record is being reviewed by change manager for completeness</td>
</tr>
<tr>
<td>Implement</td>
<td>Change is being implemented</td>
</tr>
<tr>
<td>Authorize</td>
<td>Change record is being reviewed by CAB for authorization</td>
</tr>
<tr>
<td>Review</td>
<td>Change has been completed, and needs post-change review by CAB</td>
</tr>
<tr>
<td>Closed</td>
<td>Change has been Closed</td>
</tr>
</tbody>
</table>
Only New/Assess and Implement/Review need to be performed by Change Coordinator.

Click “Implement” when you start performing the change.
Change Record

- Click “Complete Change” when you finish performing the change

- Close code and Close notes are required to complete a change

The updates have been applied to all servers. In the future we’ll need to be aware that cognos doesn’t use the system version of httpd, although we’ve put measures in place to nullify this going forward. We’ll also need to bear in mind that when servers running PHP are updated, we need to monitor the messages file for SELinux alerts that PHP isn’t able to use something (i.e. domain name resolution) and resolve that quickly. Would be helpful to have test scenarios for the various servers that need to be updated to verify a successful update, but my requests for this have been for the most part unanswered.
Routine Change Proposal

- All routine changes must first receive CAB approval to be considered routine.
- Changes must have a defined and consistent process to implement.
- Must be low risk

Routine Change Proposal

- Easiest way to create:
  1. Create a Normal Change
  2. Right-click in header, select “Propose Standard Change Template”
Routine Change Proposal

- Routine Change Proposal will be reviewed by CAB
- Once approved, routine changes can be performed without further CAB approval
  - Only during agreed maintenance windows
  - Each Routine Change still gets logged
Routine Change

• After a Routine Change has been approved, it will appear in the Routine Change catalog

Routine Change

• Changes are placed into categories
Routine Change

- Clicking a change created a new Routine Change record
- All information in the original proposal gets copied into the change record
Routine Change

• Update fields as necessary for the change
Routine Change

- Click “Schedule” to schedule the change

Routine Change

- Just like a Normal Change:
  – Click "Implement" when you start the change
  – Click “Complete Change” when you are done
Viewing Change Records

- **Overview**: dashboard of changes scheduled this week and last week
- **Changes Assigned to Me/Team**: list of changes assigned to you or to members of any of your teams/groups

Viewing Change Records

- **Open**: list of all changes in an Open state
- **Closed**: list of changes in a closed state
Viewing Change Records

• Overview

Viewing Change Records

• List of Open Changes
Change Schedule

- Shows a timeline view of changes