Levels of Preservation
ReBoot Project
NDSA Working Group Activities

Best Practices Exchange 2019
Columbus, OH
April 29, 2019
Bradley Daigle
Carol Kussmann
Goals of ReBoot Project

- Create an updated version of the Levels document

- Create other materials to support an updated Levels document, such as case studies and teaching materials

- Articulate and ongoing strategy by which the Levels can be adapted and updated on a regular basis
ReBoot Project Timeline

1. ReBoot Team Formed 3/2018
   Team formed from interested Coordinating Committee members to lead groups of community members.

2. Call for Participation 4/2018
   Sent out to digital preservation community.

3. Create Project Plan / Form Groups 6/2018
   Completed overall project plan. Created subgroups with community members.

4. Working Group Work Plans Created and Started
   Fall and Winter of 2018 groups met, set their work plans and got to work.

5. Sharing Initial Projects
   Spring 2019: Working groups begin to share projects, draft revisions of the Levels.

6. Collecting Feedback
   Spring 2019: Revisions group collecting feedback on initial updates.

7. Revisions
   Spring 2019: Revisions group collecting feedback on initial updates.

8. Final Products
   Fall and Winter of 2019, create final Products. New Levels documents along with accompanying documents.
Working Group / SubGroups

- Assessment Subgroup
- Implementation Subgroup
- Revision Subgroup
- Curatorial Layer Subgroup
- Documentation Subgroup
- Teaching, Outreach, and Advocacy Subgroup

https://ndsa.org/working-groups/levels-of-preservation/
Subgroup Activities Summary

- **Assessment and Implementation**: Used research and surveys to understand how the Levels used in the past. Information shared with Revisions group.

Revision Subgroup Activities

- Beta draft recently completed (4/15/2019)

- Proceeding to feedback process
  - Internal to NDSA Leadership
  - NDSA Levels community
  - NDSA All

- Get involved!
# First Draft of Revisions

<table>
<thead>
<tr>
<th>Storage and Geographic Location</th>
<th>Level 1 (Know your content)</th>
<th>Level 2 (Protect your content)</th>
<th>Level 3 (Monitor your content)</th>
<th>Level 4 (Sustain your content)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Have two complete copies in separate locations</td>
<td>Have three complete copies with at least one copy in a different geographic location</td>
<td>Have at least one copy in a geographic location with a different disaster threat than your other copies</td>
<td>Have at least three copies in geographic locations with different disaster threats</td>
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<tr>
<td></td>
<td><em>Document all storage media where content is stored</em></td>
<td>Document storage system(s) and storage media and the resources and dependencies they require to function</td>
<td>Have at least one copy on a different storage media type</td>
<td>Maximize storage diversification to avoid single points of failure</td>
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<td></td>
<td>Put content into a stable storage system</td>
<td>Track the obsolescence of storage hardware, software, and media</td>
<td>Have a plan and execute actions to address obsolescence of storage hardware, software and media</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Content Integrity</th>
<th>Level 1 (Know your content)</th>
<th>Level 2 (Protect your content)</th>
<th>Level 3 (Monitor your content)</th>
<th>Level 4 (Sustain your content)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Verify fixity if it has been provided with the content</td>
<td>Verify fixity when moving or copying content</td>
<td>Verify fixity of content at fixed intervals</td>
<td>Verify fixity in response to specific events or activities</td>
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<tr>
<td></td>
<td>Generate fixity info if not provided with the content</td>
<td>Use write-blockers when working with original media</td>
<td>Maintain logs of fixity info; supply audit on demand</td>
<td>Replace or repair corrupted content as necessary</td>
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<tr>
<td></td>
<td>Virus check and isolate content for quarantine as needed</td>
<td>Back up fixity information and store copy in a different location from the content</td>
<td>(Note: these 2 need work after defining terms)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Document fixity verification</td>
<td></td>
<td></td>
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</tbody>
</table>
## Possible New or Alternate View

<table>
<thead>
<tr>
<th>Level</th>
<th>Content</th>
<th>Content Integrity</th>
<th>Aspect</th>
</tr>
</thead>
</table>
| **Level 1 (Know your content)** | Create inventory of content’s file formats  
Document the process of how file formats were identified | Verify fixity if it has been provided with the content  
Generate fixity info if not provided with the content  
Virus check and isolate content for quarantine as needed | Determine the human and software agents that should have read, write, move and delete authorizations to content |
| **Level 2 (Protect your content)** | Make sure that content is what it purports to be, to the fullest extent possible | Verify fixity when moving or copying content  
Use write-blockers when working with original media  
Back up fixity information and store copy in a different location from the content | Apply and document authorizations to content |
| **Level 3 (Monitor your content)** | Keep track of evolving technologies on which content is dependent for their accessibility | Verify fixity of content at fixed intervals  
Maintain logs of fixity info; supply audit on demand  
(Note: these 2 need work after defining terms)  
Document fixity verification procedures/workflows | Maintain logs and identify the human and software agents that performed actions on content |
Sneak Peek: Review One Section

• Break into 5 groups

• Spend some time reviewing the one section of the levels revision

• Add your comments in the box below the material including your:
  • General thoughts
  • Wording suggestions
  • Questions you still have
Group Discussion
Next Steps: Continuing Subgroup Work

- **Revisions**: Modify LoP as needed based on feedback

- **Curatorial**: Finish up written draft version / create visual version

- **Education, Outreach, Advocacy**: Work to develop products to help use the Levels.
Education, Outreach, and Advocacy

- Will be based on the new levels and subgroup recommendations
- Looking at education from many sides
- Possible outreach on additional “views” not undertaken in this round:
  - Assessment
  - Risk mitigation and management
Reach Out to Us

- Office Hours for NDSA today at 4:05 in Office 2 to discuss further or any other NDSA questions

- Join the Levels of Preservation Community to help further review or get involved

- Presenters
  - Bradley Daigle; bradley@virginia.edu
  - Carol Kussmann; kussmann@umn.edu