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Google Workspace Program Overview

- Project 1 – Data Analysis of VT Google Service Usage
  - Aug.–Nov. 2021

- Project 2 – Service Decisions
  - Today

- Project 3 – Implementation of Services Changes
  - Dec. 2021 – July 2022
Objectives

1. How are Google accounts provisioned and deprovisioned today? *(slides 6 – 8)*
2. How is Google service eligibility being determined today? *(slides 6 – 7, 12)*
3. How are constituent groups (undergrads, graduates, faculty/staff, alumni, retirees, etc.) being defined and how should they be defined? *(slide 12)*
4. How are Google services being utilized and by whom? *(slides 10 – 42)*
5. How is Google storage being distributed and utilized? *(slides 10 – 42)*
6. What well-defined constituent role(s) should no longer have Google service? How and when do we deprovision these accounts? *(slides 36 – 40)*
VT Google User Accounts and services are provisioned when users have one or more of the following affiliations.

<table>
<thead>
<tr>
<th>VT-ACTIVE-MEMBER</th>
<th>VT-EMPLOYEE-RETIREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>• VTC-STUDENT-ENROLLED</td>
<td>VT-EMPLOYEE-RETIREE</td>
</tr>
<tr>
<td>• VTC-EMPLOYEE</td>
<td>VT-ALUM</td>
</tr>
<tr>
<td>• VT-STUDENT-ENROLLED</td>
<td>VT-STUDENT-NEW-ADMIT</td>
</tr>
<tr>
<td>• VT-EMPLOYEE</td>
<td>VT-STUDENT-NEW-ADMIT</td>
</tr>
<tr>
<td>• VT-EMPLOYEE-NON-STATE</td>
<td>VT-STUDENT-FUTURE</td>
</tr>
<tr>
<td>• VT-EMPLOYEE-PREHIRE</td>
<td>VT-STUDENT-RECENT</td>
</tr>
<tr>
<td>• VT-EMPLOYEE-STATE</td>
<td>VT-STUDENT-WAGE</td>
</tr>
<tr>
<td>• VT-EMPLOYEE-WAGE</td>
<td>VT-AFFILIATE-TEMPORARY</td>
</tr>
<tr>
<td>• VT-FACULTY</td>
<td>VT-AFFILIATE-LCI</td>
</tr>
<tr>
<td>• VT-STAFF</td>
<td>VT-ROBOT</td>
</tr>
</tbody>
</table>

Affiliation definitions: KB0011168
Active VT Faculty and Staff may also request the creation of a Google Auxiliary Email (GAE) account for the following business use cases:

- Organization / Group Email
- Organization / Group Calendar
- Department Service Account

Note: Since March 2021, GAE account requests require Dean, Director, or Department Head approval.
VT Google Accounts are removed under the following circumstances

• Administrative Action

• Users are marked as deceased in Banner

• Sponsored PID expiration

• VT-EMPLOYEE-FORMER with no other eligible affiliations
  • After 18 months and only if the PIDs for the users are not locked
  • This deprovisioning process also handles former employees with VT-ALUM-CONSTITUENT and VT-ALUM-FRIEND affiliations.
Deprovisioning workflows **DO NOT** address the following use cases:

- **VT-STUDENT** – students that attended but never graduated and students that applied but did not attend
- **VT-AFFILIATE** – users that lost all other affiliations with the university
- **VT-AFFILIATE-LCI-FORMER** – former students at the VT Language Culture Institute
- **VT-EMPLOYEE-FORMER** with locked PIDs (typically due to password expirations)
- **VT-ALUM-PARENT** – individual designated by the VT Alumni/Development Office as a parent of a student or alumnus
- **VT-ALUM CONSTITUENT** (if not a former employee) – individual designated by the VT Alumni/Development Office as an alumni constituent
- **VT-ALUM-FRIEND** (if not a former employee) – individual designated by the VT Alumni/Development Office as an alumni friend
- **VT-EMPLOYEE-NON-STATE** - an individual who is employed by Virginia Tech but is not paid by Virginia Tech.
VT Google Usage Overview
VT Google Services are provided to all employees, students, alumni, and retirees. Use cases include academic, file backups, personal, professional, and research.

Today, we have

- 202,803 user accounts
- 991 GAE accounts
- 5.2 PB of storage usage from the following sources
  - Gmail .5 PB
  - Drive 4.5 PB
  - Photos .2 PB
- 54,647 distinct shared drives using a total of ~.5 PB of VT's total pooled storage allotment
  - Important: The total shared drive storage is derived from VT's tenant-wide storage usage reported by Google on 7/16/2021. Since Google's API does not provide a way to pull shared drive storage details directly, the working group has not been able to confirm the storage usage.
Constituent groups for employees, students, alumni, and retirees align well with the standard affiliations approach. Two additional groups were created to identify other eligible or ineligible users receiving service today.

**EMPLOYEE** = VT-EMPLOYEE or VTC-EMPLOYEE

**STUDENT** =
VTC-STUDENT-ENROLLED or
VT-STUDENT-ENROLLED or
VT-STUDENT-NEW-ADMIT or
VT-STUDENT-FUTURE or
VT-STUDENT-RECENT or
VT-STUDENT-WAGE

**ALUMNI** = VT-ALUM

**RETIREE** = VT-EMPLOYEE-RETIREE or VT-EMPLOYEE-EMERITUS

**OTHER - ELIGIBLE** =
VT-AFFILIATE-TEMPORARY or
VT-AFFILIATE-LCI or
VT-ROBOT

**OTHER - INELIGIBLE** =
*All remaining accounts*

**Important:** All accounts are assigned to one group based on the following precedence order.

*Employee > Student > Alumni > Retiree > Other - Eligible*
VT Google Constituent Groups – Number of Accounts
VT Google Constituent Groups – Storage Usage (TB)
Employee Constituent Group
The 13,675 accounts in this group must have one or more of the following eligible affiliations.

<table>
<thead>
<tr>
<th>DOMINANT EMPLOYEE AFFILIATION COMBINATIONS</th>
<th>ACCOUNTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT-EMPLOYEE-STATE, VT-FACULTY</td>
<td>4,570</td>
</tr>
<tr>
<td>VT-EMPLOYEE-STATE, VT-STAFF</td>
<td>3,633</td>
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<tr>
<td>VT-EMPLOYEE-NON-STATE</td>
<td>1,800</td>
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<tr>
<td>VT-EMPLOYEE-WAGE, VT-STAFF</td>
<td>1,100</td>
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<td>VT-EMPLOYEE-STATE, VT-EMPLOYEE-WAGE, VT-FACULTY</td>
<td>812</td>
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<tr>
<td>VT-EMPLOYEE, VT-EMPLOYEE-NON-STATE</td>
<td>566</td>
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<tr>
<td>VT-EMPLOYEE-WAGE, VT-FACULTY</td>
<td>466</td>
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Employee Constituent Group

VT-EMPLOYEE-STATE
VT-EMPLOYEE-NON-STATE
VT-EMPLOYEE-PREHIRE
VT-EMPLOYEE-WAGE
VT-FACULTY
VT-STAFF
VTC-EMPLOYEE
Employee Constituent Group - Users

User accounts (12,875) and Storage Distribution Comparisons.

\[ \sigma = 23.37 \text{ GB} \]

-1\(\sigma\) = 7,553 (59%) users w/ avg 1.67 GB
1\(\sigma\) = 3,116 (24.2%) users w/ avg 14.89 GB
2\(\sigma\) = 754 (5.9%) users w/ avg 39.93 GB
3\(\sigma\) = 321 (2.5%) users w/ avg 64.04 GB
4\(\sigma\) = 197 (1.5%) users w/ avg 87.45 GB
5\(\sigma\) = 125 (1.0%) users w/ avg 112.38 GB
>5\(\sigma\) = 809 (6.3%) users w/ avg 997.70 GB

Total storage used by the outliers (>5\(\sigma\)) is .79 PB.

Total storage used by the outliers (>5\(\sigma\)) is .79 PB.

78% covered by 20GB license.
Employee Constituent Group - GAEs

GAE accounts (800) and Storage Distribution Comparisons.

$\sigma = 23.37 \text{ GB}$

$-1\sigma = 731 \ (91.4\%) \text{ users w/ avg 0.36 GB}$

$1\sigma = 27 \ (3.4\%) \text{ users w/ avg 14.17 GB}$

$2\sigma = 6 \ (0.8\%) \text{ users w/ avg 40.06 GB}$

$3\sigma = 1 \ (0.1\%) \text{ users w/ avg 53.80 GB}$

$4\sigma = 4 \ (0.5\%) \text{ users w/ avg 92.11 GB}$

$5\sigma = 1 \ (0.1\%) \text{ users w/ avg 115.51 GB}$

$>5\sigma = 30 \ (3.8\%) \text{ users w/ avg 12,566.32 GB}$

Total storage used by the outliers ($>5\sigma$) is .37 PB

94% covered by 20GB license
Employee Constituent Group

Last Login, Gmail Activity, and Drive Activity based on time periods.

For users who have not logged in "more than 5 years ago",

- 61% of the accounts have locked PIDs
- 88% of the accounts have no email forward set
- 75% of the accounts have VT-EMPLOYEE-NON-STATE as an affiliation
Student Constituent Group
Student Constituent Group

The 49,914 accounts in this group must have one or more of the following eligible affiliations in their list of affiliations.

- VT-STUDENT-ENROLLED or
- VT-STUDENT-NEW-ADMIT or
- VT-STUDENT-FUTURE or
- VT-STUDENT-RECENT or
- VT-STUDENT-WAGE or
- VTC-STUDENT-ENROLLED

<table>
<thead>
<tr>
<th>DOMINANT STUDENT AFFILIATION COMBINATIONS</th>
<th>ACCOUNTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT-STUDENT-FUTURE, VT-STUDENT-RECENT</td>
<td>14,861</td>
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<td>4,653</td>
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<td>VT-STUDENT-FUTURE, VT-STUDENT-RECENT, VT-STUDENT-WAGE</td>
<td>3,129</td>
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<tr>
<td>VT-STUDENT-NEW-ADMIT</td>
<td>2,372</td>
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<td>VT-STUDENT-RECENT, VT-STUDENT-WAGE</td>
<td>2,038</td>
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Student Constituent Group

Student accounts (49,914) and Storage Distribution Comparisons.

$\sigma = 23.37$ GB

$-1\sigma = 42,041$ (84.2%) users w/ avg 1.43 GB

$1\sigma = 5,342$ (10.7%) users w/ avg 13.80 GB

$2\sigma = 982$ (2.0%) users w/ avg 39.83 GB

$3\sigma = 426$ (.9%) users w/ avg 64.07 GB

$4\sigma = 232$ (.5%) users w/ avg 87.04 GB

$5\sigma = 156$ (.3%) users w/ avg 112.19 GB

$>5\sigma = 735$ (1.5%) users w/ avg 984.51 GB

Total storage used by the outliers ($>5\sigma$) is .7 PB

Note: There are 3 ineligible GAE accounts in this set.

93% covered by 20GB license
Student Constituent Group

Last Login, Gmail Activity, and Drive Activity based on time periods.

For users who have not logged in "more than 5 years ago",

- 42% of the accounts have locked PIDs
- 93% of the accounts have no email forward set
- 51% of the accounts have VT-STUDENT, VT-STUDENT-APPLICANT, VT-NEW-ADMIT as an affiliation
Alumni Constituent Group
Alumni Constituent Group

The 108,992 accounts in this group must have one or more of the following eligible affiliations in their list of affiliations.

<table>
<thead>
<tr>
<th>ALUMNI AFFILIATION COMBINATIONS</th>
<th>ACCOUNTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT-ALUM</td>
<td>108,992</td>
</tr>
</tbody>
</table>
Alumni Constituent Group

Alumni accounts (108,992) and Storage Distribution Comparisons.

\[ \sigma = 23.37 \text{ GB} \]

\(-1\sigma = 89,398 \ (82.0\%) \text{ users w/ avg 1.53 GB} \]

\(+1\sigma = 14,171 \ (13.0\%) \text{ users w/ avg 13.32 GB} \]

\(+2\sigma = 2008 \ (1.8\%) \text{ users w/ avg 39.85 GB} \]

\(+3\sigma = 885 \ (.8\%) \text{ users w/ avg 63.92 GB} \]

\(+4\sigma = 500 \ (.5\%) \text{ users w/ avg 88.12 GB} \]

\(+5\sigma = 310 \ (.3\%) \text{ users w/ avg 111.55 GB} \]

\(>5\sigma = 1,720 \ (1.6\%) \text{ users w/ avg 1,263.86 GB} \]

Total storage used by the outliers (>5\(\sigma\)) is 2.1 PB

Note: There are 18 ineligible GAE accounts in this set.
Alumni Constituent Group

Last Login, Gmail Activity, and Drive Activity based on time periods.

For users who have not logged in "more than 5 years ago",

- 93% of the accounts have locked PIDs
- 79% of the accounts have no email forward set

Across all Alumni accounts,

- 57% have locked PIDs
- 55% have not logged in 12 months
- 88% of the accounts have no email forward set
- 81% have had no drive activity in the last 6 months
Retiree Constituent Group
Retiree Constituent Group

The 2,649 accounts in this group must have one or more of the following eligible affiliations in their list of affiliations.

VT-EMPLOYEE-RETIREE
VT-EMPLOYEE-EMERITUS
Retiree Constituent Group

Retiree accounts (2,649) and Storage Distribution Comparisons.

$\sigma = 23.37 \text{ GB}$

$-1\sigma = 2,115 \ (79.8\%) \text{ users w/ avg 1.46 } \text{ GB}$

$1\sigma = 433 \ (16.4\%) \text{ users w/ avg 13.08 } \text{ GB}$

$2\sigma = 51 \ (1.9\%) \text{ users w/ avg 37.53 } \text{ GB}$

$3\sigma = 9 \ (0.3\%) \text{ users w/ avg 66.30 } \text{ GB}$

$4\sigma = 7 \ (0.3\%) \text{ users w/ avg 88.26 } \text{ GB}$

$5\sigma = 6 \ (0.2\%) \text{ users w/ avg 111.75 } \text{ GB}$

$>5\sigma = 28 \ (1.1\%) \text{ users w/ avg 638.94 } \text{ GB}$

Total storage used by the outliers (>5\(\sigma\)) is 17.5 TB

Note: There are 6 ineligible GAE accounts in this set.
Retiree Constituent Group

Last Login, Gmail Activity, and Drive Activity based on time periods.

For users who have not logged in "more than 5 years ago",
- 96% of the accounts have locked PIDs
- 81% of the accounts have no email forward set

Across all Retiree accounts,
- 50% of the accounts have locked PIDs
- 51% have not logged in the past year
- 81% of the accounts have no email forward set
- 77% have had no drive activity in the last 6 months
Eligible Constituent Group

Other - Eligible Constituent Group
Other - Eligible Constituent Group

The 1,996 accounts in this group must have one or more of the following eligible affiliations in their list of affiliations.

- VT-AFFILIATE-TEMPORARY
- VT-AFFILIATE-LCI
- VT-ROBOT

### Dominant Affiliation Combinations

<table>
<thead>
<tr>
<th>Dominant Affiliation Combinations</th>
<th>Accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT-AFFILIATE-LCI</td>
<td>1,455</td>
</tr>
<tr>
<td>VT-AFFILIATE-TEMPORARY</td>
<td>424</td>
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<tr>
<td>VT-AFFILIATE-TEMPORARY, VT-STUDENT</td>
<td>55</td>
</tr>
<tr>
<td>VT-AFFILIATE-LCI, VT-STUDENT</td>
<td>33</td>
</tr>
</tbody>
</table>
Other - Eligible Constituent Group

Other - Eligible accounts (1,996) and Storage Distribution Comparisons.

\[ \sigma = 23.37 \text{ GB} \]

\[-1\sigma = 1,921 (96.2\%) \text{ users w/ avg 0.21 GB} \]

\[1\sigma = 59 (3.0\%) \text{ users w/ avg 14.54 GB} \]

\[2\sigma = 5 (.2\%) \text{ users w/ avg 44.51 GB} \]

\[3\sigma = 0 (0\%) \text{ users} \]

\[4\sigma = 2 (.1\%) \text{ users w/ avg 92.16 GB} \]

\[5\sigma = 2 (.1\%) \text{ users w/ avg 118.38 GB} \]

\[>5\sigma = 7 (0.4\%) \text{ users w/ avg 358.07 GB} \]

Total storage used by the outliers (>5\(\sigma\)) is 2.5 TB

Note: There are 150 GAE accounts in this set.
Other - Eligible Constituent Group

Last Login, Gmail Activity, and Drive Activity based on time periods.

For users who have not logged in "more than 5 years ago",
- 90% of the accounts have locked PIDs
- 97% of the accounts have no email forward set

Across all accounts,
- 72% of the accounts have locked PIDs
- 71% have not logged in the past year
- 96% of the accounts have no email forward set
- 92% have had no drive activity in the last 6 months
Other - Ineligible Constituent Group
Other Ineligible Constituent Group

There are 26,568 accounts in this group representing affiliation combinations that do not match any of the eligibility rules defined for the other groups.

Note: Advancement wants to compare some of these accounts to their list of donors before deprovisioning steps move forward.

<table>
<thead>
<tr>
<th>DOMINANT AFFILIATION COMBINATIONS</th>
<th>ACCOUNTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT-STUDENT</td>
<td>13,255</td>
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<tr>
<td>VT-EMPLOYEE-FORMER</td>
<td>4,557</td>
</tr>
<tr>
<td>VT-EMPLOYEE-FORMER, VT-STUDENT</td>
<td>3,801</td>
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<tr>
<td>VT-ALUM-CONSTITUENT, VT-EMPLOYEE-FORMER</td>
<td>1,928</td>
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<tr>
<td>VT-AFFILIATE-LCI-FORMER</td>
<td>1,143</td>
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<tr>
<td>VT-ALUM-CONSTITUENT, VT-EMPLOYEE-FORMER, VT-STUDENT</td>
<td>473</td>
</tr>
<tr>
<td>VT-AFFILIATE</td>
<td>394</td>
</tr>
</tbody>
</table>
Other - Ineligible Constituent Group

Other - Ineligible accounts (26,568) and Storage Distribution Comparisons.

\[ \sigma = 23.37 \text{ GB} \]

-1\(\sigma\) = 25,164 (94.7%) users w/ avg 0.61 GB

1\(\sigma\) = 924 (3.48%) users w/ avg 14.14 GB

2\(\sigma\) = 206 (0.8%) users w/ avg 37.45 GB

3\(\sigma\) = 65 (0.2%) users w/ avg 63.97 GB

4\(\sigma\) = 34 (.1%) users w/ avg 89.03 GB

5\(\sigma\) = 19 (.07%) users w/ avg 111.44 GB

>5\(\sigma\) = 156 (0.6%) users w/ avg 1,697.39 GB

Total recovered storage once all accounts are deprovisioned .3 PB.

Note: There are 14 ineligible GAE accounts in this set.
Other - Ineligible Constituent Group

Last Login, Gmail Activity, and Drive Activity based on time periods.

For users who have not logged in "more than 5 years ago",
- 98% of the accounts have locked PIDs
- 93% of the accounts have no email forward set

Across all accounts,
- 84% of the accounts have locked PIDs
- 81% have not logged in the past year
- 93% of the accounts have no email forward set
- 95% have had no drive activity in the last 6 months
When should the VT Google services be removed for these accounts?

• For VT-EMPLOYEE-FORMER, once SIS fixes the locked PID issue, these users will move through the normal deprovisioning workflows. It is recommended that this fix be prioritized so accounts exceeding 18-months can start the 30-day account removal in August 2021.

• For VT-STUDENT, VT-AFFILIATE-LCI-FORMER, VT-AFFILIATE, and former VT-EMPLOYEE-NON-STATE deprovisioning of service for these accounts should start in August 2021.
VT Google
Shared Drives
There are currently 54,647 distinct shared drives using a total of ~.5 PB of VT’s total pooled storage allotment.

770 of these shared drives have no eligible manager assigned, i.e. External Users or Other – Ineligible Users.

22,128 of these shared drives have Alumni identified as managers.