login.gov

Privacy Impact Assessment

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POINT *of* CONTACT

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Document purpose

This document contains important details about login.gov. In order to operate login.gov, the General Services Administration (GSA) collects email addresses and depending on how you choose to use login.gov, may collect and use additional personally identifiable information ("PII"). PII is any information[1] that can be used to distinguish or trace an individual's identity like a name, address, or place and date of birth.

GSA uses Privacy Impact Assessments (PIAs) to explain how it collects, uses, secures, and destroys information in ways that protect privacy. This PIA is divided into sections that reflect GSA's privacy policy and program goals. The sections also align to the Fair Information Practice Principles ("FIPPs"), a set of eight precepts that are codified in the Privacy Act of 1974.[2]

Project

login.gov

Project/system includes information about

Any member of the public can use login.gov to sign in to multiple government agencies. The goal of the system is to make managing federal benefits, services, and applications easier and more secure.

Overview

login.gov is an authentication platform that makes the public's online interactions with the U.S. government simpler, more efficient, and intuitive. The system is a single, secure platform owned and operated by GSA through which members of the public can sign in and access information and services from participating federal agencies ("partner agencies"). login.gov reduces the burden of operations, maintenance, and security oversight for partner agencies.[3]

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[1] OMB Memorandum *Preparing for and Responding to a Breach of Personally Identifiable Information* (OMB M-17-12) defines PII as: "information that can be used to distinguish or trace an individual's identity, either alone or when combined with other information that is linked or linkable to a specific individual." The memorandum notes that "because there are many different types of information that can be used to distinguish or trace an individual's identity, the term PII is necessarily broad."

[2] Privacy Act of 1974, 5 U.S.C. § 552a, as amended.

[3] Each agency partner is a "relying party" on login.gov under NIST's definition of that term: "An entity that relies upon the Subscriber's token and credentials or a Verifier's assertion of a Claimant's identity, typically to process a transaction or grant access to information or a system."

SECTION 1.0 PURPOSE OF COLLECTION

GSA states its purpose and legal authority before collecting PII.

1.1 Why is GSA collecting the information?

GSA has developed login.gov as a single sign-on identity platform for members of the public to access government services online that require user authentication.[4] login.gov is a shared service that federal agencies can use and integrate with online applications; however, agencies are not required to use login.gov.

login.gov manages user authentication by allowing users to sign in with an email address, password, multi-factor method, and "identity proofing" by verifying an individual's asserted identity on behalf of partner agencies. User authentication is the process of establishing confidence in user identities electronically presented to an information system. Identity proofing is the process of verifying that a person is who they say they are. PII must be collected from a login.gov user to identity proof that user and then authenticate that user's identity at a Level of Assurance (LOA) required by a partner agency to grant access to its information, applications, programs, or records (for the purpose of this PIA, ''services"). The National Institute of Standards and Technology (NIST) defines "assurance" as the degree of confidence in the vetting process used to establish the identity of an individual to whom a credential is issued and the degree of confidence that the individual who uses the credential[5] is the individual to whom the credential was issued.[6] login.gov operates at two levels of assurance, LOA1 and LOA3[7]. LOA1 provides a partner agency very limited assurance that the same individual who created the login.gov account is, in fact, accessing that partner agency's service or information.[8] A user will only be asked for information necessary to achieve the LOA required by the partner agency to access a given service. This PIA analyzes how login.gov works at both LOA levels; how login.gov manages information as a strategic resource;[9] incorporates NIST's definitions of privacy risk; and describes how login.gov mitigates such risks.[10]

LOA1

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[4] See 6 U.S.C. § 1523(b)(1)(A)-(E): Federal cybersecurity requirements.

[5] See NIST Special Publication 800-63-2, "Electronic Authentication Guideline" which defines "credential" as "an object or data structure that authoritatively binds an identity (and optionally, additional attributes) to a token possessed and controlled by a Subscriber." In this instance, a login.gov user is a "subscriber" and their credential is the combination of their email address and universal unique identifier (UUID).

[6] Ibid.

[7] See OMB M-04-04, "E-Authentication Guidance for Federal Agencies" There are four levels of assurance, 1 to 4, with each increasing level representing in terms of the consequences of authentication errors and misuse of credentials.

[8] At LOA1, identity proofing is not required; therefore any names in credentials and assertions are assumed to be pseudonyms. LOA1 allows a partner agency to distinguish a user account based on the email address provided by the user and the Universally Unique Identification Number (UUID) assigned by Login.gov to that user. Each UUID is a 128-bit number.

[9] OMB Circular A-130.

[10] *See* NISTIR 8062, "An Introduction to Privacy Engineering and Risk Management in Federal Systems." Data actions are any system operations that process PII. PII processing includes, but is not limited to, the collection, retention, logging, merging, disclosure, transfer, and disposal of PII.

When creating a login.gov account, a user signs into that agency's service with an email address and password (a user account). LOA1 allows a partner agency to distinguish a user account based on the user's self-asserted email address. LOA1 provides a partner agency minimal assurance that the same individual who created the login.gov account is accessing that partner agency's service or information. LOA1 provides no information about a user's identity beyond an email address. login.gov authenticates a user only by validating that person is the owner of an account through a valid email address and password.

In addition to the basic requirements for LOA1, login.gov also requires multi-factor authentication (MFA) as an additional security measure. Any user may set up multi-factor authentication using either a phone number or authentication application ("app"). In addition, federal agencies and the Department of Defense (DoD) allow employees/service members to use a personal identity verification (PIV) or common access card (CAC)[11] as an additional factor when signing into specific applications. PIV and CAC cards are only used as an additional factor beyond email and password, and by themselves cannot be used to sign into a login.gov account.

Once a user creates an account, that user's account information is assigned a master universal unique identifier (UUID; also known as a "meaningless but unique number" or "MBUN") to identify the user in login.gov. This master UUID is only used within the login.gov system. The user is assigned an additional agency-specific UUID for each agency the user accesses. The user's agency UUID and the minimum set of user account information that a partner agency identifies as needed to allow access to its service is provided only after the user consents to send that information.

LOA3

The LOA3 standard provides a partner agency substantially more assurance that the same individual who created the login.gov account is accessing that partner agency's service or information. This added assurance is derived from the additional information that login.gov requires to authenticate an account. login.gov uses the same multi-factor approach for both LOA1 and LOA3. However, because the LOA3 standard requires identity proofing, login.gov asks the user to provide the following PII: full name, date of birth, home address, Social Security Number, the type and number of the state-issued identification card (ID), and, with consent, login.gov may use the contact phone number provided to confirm home address.

login.gov collects and maintains a user's LOA1 account information, and if required, LOA3 account information. login.gov verifies a user's identity at LOA3 by comparing the user-provided LOA3 account information to data maintained by a third-party record holder. Third-party identity proofing services used by login.gov may employ a variety of verification techniques, including but not limited to verifying a user's self-reported personal information and details from a user's government-issued identification.

[11] PIV (Personal Identity Verification) cards are standardized by the NIST publication Federal Information Processing Standard (FIPS) 201, and mandated for use by executive branch agencies by Homeland Security Presidential Directive 12 (HSPD-12). Within the Department of Defense, the Common Access Card (CAC) is functionally equivalent.

PII Categories	LOA1: stored within login.gov and shared with agency partner	LOA3: stored within login.gov and shared with agency partner	Shared with third-party provider[12]
Email Address	Yes	Yes	No
Master Universally Unique Identifier (UUID) or MBUN[13]	Stored only	Stored only	No
Agency UUID	Yes	Yes	No
Phone Number for multi-factor authentication (MFA)	Stored only	Stored only	Yes[14]
PIV/CAC subject[15]	Yes[16]	Yes[17]	No
Full Name	No	Yes	Yes
Address	No	Yes	Yes
Date of birth	No	Yes	Yes
Social Security Number	No	Yes	Yes
State-issued ID Number and Type	No	No	Yes[18]
Contact Phone Number	No	Yes	Yes

The identity proofing process between the login.gov system and third-party identity proofing services takes place after the user provides the required account information. For example, login.gov will request information about a state-issued ID type and date of issuance, and login.gov will then relay it to the third-

[12] Each third-party identity proofing service will send information back to login.gov about its attempt to identity proof the user including: transaction ID; pass/fail indicator; date/time of transaction; and codes associated with the transaction data.

[13] Multiple 'Universally Unique Identification' numbers are generated. login.gov creates a master UUID for each user in login.gov, and an additional UUID to each agency that a user visits.

[14] Multi-factor phone number is only shared with a one-time password provider to facilitate the multi-factor authentication process.

[15] The PIV/CAC public certificate does contain the user's name in the subject. However, login.gov uses the certificate only to verify that the PIV/CAC provided as the second factor is the correct PIV/CAC for the authenticating account. The PIV/CAC subject may be shared with partner agencies if requested and only if the PIV/CAC is presented during the login session.

[16] The certificate subject will be shared with the partner agency when the business case requires it.

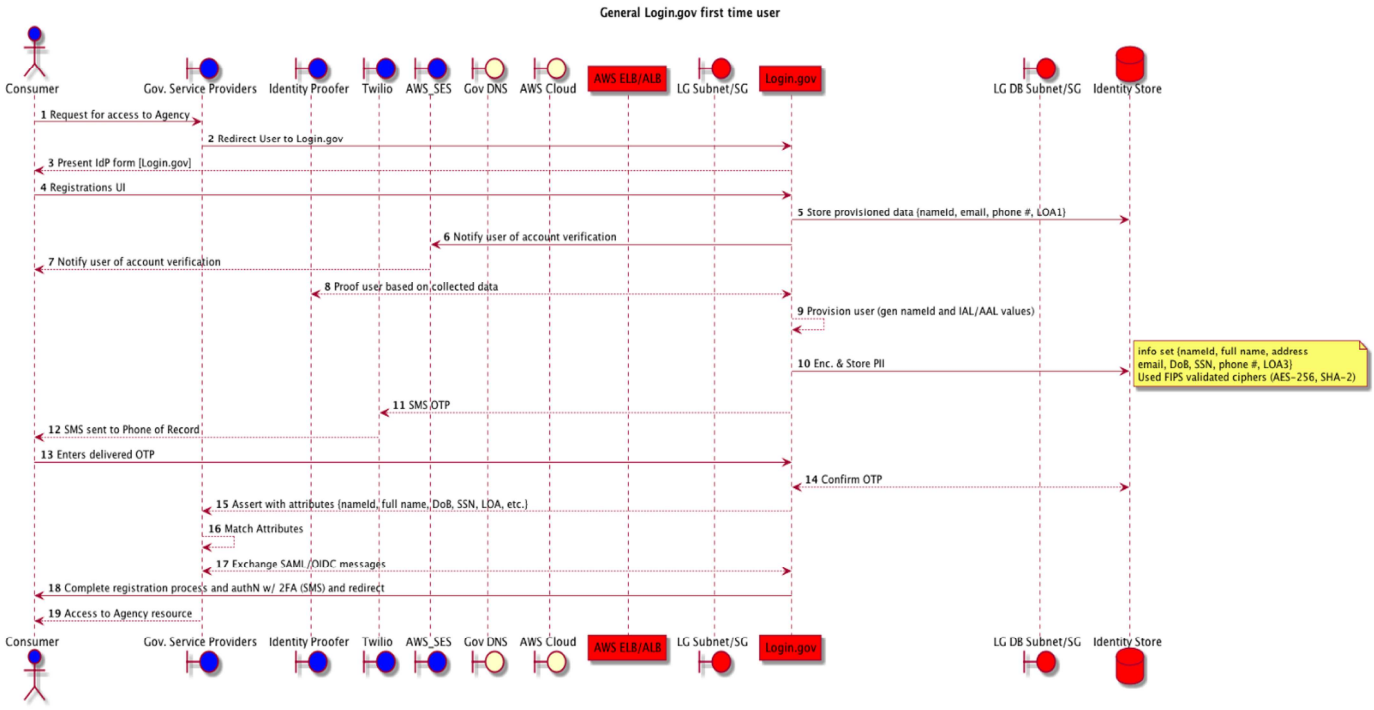
[17] The certificate subject will be shared with the partner agency when the business case requires it.

[18] State-issued ID type (e.g. driver's license, permit, or state ID) and number are collected and shared with a third-party provider for identity verification. That information is not stored by login.gov after the attempted verification.

party identity proofing service. The login.gov system does not keep this information after it is relayed.

1.2 What legal authority and/or agreements allow GSA to collect the information?

GSA developed login.gov pursuant to 6 USC § 1523 (b)(1)(A)-(E), the E-Government Act of 2002 (44 USC § 3501), and 40 USC § 501. login.gov presents the following Privacy Act Notice to the user when creating an account or signing in using login.gov:



Privacy Act Notice for LOA1:

GSA is asking for your email address in order to create your account. You are not required to provide it; however, if you do not, you won't be able to create a login.gov account.

This collection of information is authorized by 6 USC § 1523 (b)(1)(A)-(E), the E-Government Act of 2002 (44 USC § 3501), and 40 USC § 501. GSA uses your email address to create your account and may disclose this information pursuant to its published Privacy Act system of records notice, GSA/TTS-1.

Privacy Act Notice for LOA3:

GSA is asking for your personal information in order to validate and authenticate your identity. You are not required to provide any personal information. However, if you do not, you won't be able to access services which require your login.gov account to be authenticated.

This collection of information is authorized by 6 USC § 1523 (b)(1)(A)-(E), the E-Government Act of 2002 (44 USC § 3501), and 40 USC § 501. GSA will use this information to attempt to verify you and may disclose this information pursuant to its published Privacy Act system of records notice, GSA/TTS-1.

1.3 Is the information searchable by a personal identifier, for example, a name or Social Security number? If so, what Privacy Act System of Records Notice(s) apply/applies to the information being collected?

Yes, GSA's Technology Transformation Service (TTS) published a SORN for login.gov on January 19, 2017, number GSA/TTS-1 and modified it on August 10, 2017.

1.4 Has a records retention schedule been approved by the National Archives and Records Administration (NARA) for the information system(s)? Explain how long and for what reason the information is retained.

System records will be disposed of in accordance with NARA's General Records Schedule (GRS) 3.2 "System access records," which covers user profiles, log-in files, password files, audit trail files and extracts, system usage files, and cost-back files used to assess charges to partner agencies for usage of login.gov.

1.5. Are there any privacy risks for this system that relate to the purpose of the collection? If so, how will GSA mitigate these risks?

Potential Privacy Risk: A user may not recognize the login.gov interface when trying to access a partner agency's services or understand why the system is asking for the information it does.

Mitigation: login.gov designers have conducted usability testing to decrease the risk that users don't have adequate prompts and explanations for what is happening. The web-based interface provides visual cues and instructions while links to the Privacy Policy, Terms of Use, Privacy Act Notice, and this PIA explain the overall purpose of the system. Additionally, login.gov designers conduct regular usability testing for functional upgrades to decrease the risk that users don't understand why they are being asked to provide personal information.

SECTION 2.0 OPENNESS AND TRANSPARENCY

GSA is open and transparent. It notifies individuals of the PII it collects and how it protects, uses and shares it. It provides straightforward ways for individuals to learn about how GSA handles PII.

2.1 Will individuals be given notice prior to the collection and/or sharing of personal information about them? If not, please explain.

Yes. login.gov only collects, uses, or discloses information with the user's consent or as authorized by the system of records notice. The system's collection, use, and disclosure of information comport with GSA's adoption of the Fair Information Practice Principles ("FIPPs"), and login.gov does not make data actions (e.g., sharing a user's information with a partner agency) without the user's consent. Information is shared with a partner agency only after the user gives consent.

Each user is provided a Privacy Act Notice (see section 1.2) with links to the login.gov Privacy Policy and Terms of Use before creating an account and submitting information. The login.gov Privacy Policy describes, among other things, what information is collected and stored automatically; how to share submitted information; security practices; and the purpose of the information collection. Users may access the login.gov Privacy Policy on any web page of the site.

2.2 Are there any privacy risks for this system that relate to openness and transparency? If so, how will GSA mitigate these risks?

Yes, there is a risk that users may not fully understand that login.gov is attempting to identity proof them so that they can access partner agency information and services. To mitigate this risk, login.gov provides instructions and notices at the points at which information is collected to explain how and why the system operates.

SECTION 3.0 DATA MINIMIZATION

GSA limits the collection of PII to what is needed to accomplish the stated purpose for its collection. GSA keeps PII only as long as needed to fulfill that purpose.

3.1 Whose information is included in the system?

Members of the public who choose to create a login.gov account and Federal employees/DoD service members who need access to specific applications using PIV/CAC.

3.2 What PII will the system, application or project include?

Refer to table in section 1.1.

3.3 Why is the collection and use of the PII necessary to the system, application or project?

All users must provide an email address to create a LOA1 account and additional PII is necessary for agency applications that require users to create a LOA3 account.

During LOA1 account creation, the user must provide an email address and create a password. To enable multi-factor authentication as a security measure, the user can choose to receive one-time security codes via phone call or text message. If users prefer not to provide a phone number for this purpose, they can instead receive the one-time security code using an authentication application. If provided, the user's phone number is provided to a multi-factor authentication service so that it can send one-time passwords via text or phone call to that user's phone. Each user must authorize the sharing of their email address with a partner agency to access that agency's services and information and to enable that agency to recognize that user on subsequent visits.

Additional PII is collected in order to verify a user's identity and set up the LOA3 account. Full name, date of birth and social security number are needed to match the user's identity to a single individual. The collection of state ID details, address, and phone number confirms the user has access to artifacts associated with the identified individual. Information collected for LOA3 account creation is shared with third-party proofers.

3.4 Will the system, application or project create or aggregate new data about the individual? If so, how will this data be maintained and used?

Yes, the system assigns each user a master universal unique identifier (UUID)[19] during the account

[19] The login.gov system uses UUID v4 strings which are composed of 128-bit numbers. Each user is assigned one UUID per partner agency that the user accesses via login.gov.

creation process and then an additional agency UUID for each partner agency a user accesses via login.gov. The agency UUID is stored during each of the user's sessions so that each partner agency can use it to locate that user's profile within their systems. For example, if an individual accesses two different agencies' information or services through login.gov, that user is assigned two different agency UUIDs. However, each agency is only provided the user's agency UUID related to the user's visit to that agency's site. The system also keeps de-identified metadata related to the user's account and transactional data for analytic and debugging purposes. For example, metadata is used to identify user interaction types, including which types of browsers access login.gov, which multi-factor methods are used, and how many login.gov users access each agency partner site.

3.5 What protections exist to protect the consolidated data and prevent unauthorized access?

login.gov supports two types of user roles: the public user and privileged users.

Public User:
The public user role allows each user to make changes to their profile information (e.g. email address, phone number) after logging into the system. Each user must authorize the sharing of their email address with a partner agency in order to access that agency's services and information and to enable that agency to recognize that user on subsequent visits. Users trying to access agency applications and services that require LOA3 authentication will be prompted to authorize the sharing of additional data with the partner agency.

Privileged Users:
Privileged users are login.gov employees and contractors that have access to login.gov systems, which require additional safeguards and controls around their actions. All privileged users have their access reviewed on a quarterly basis. Current login.gov categories of privileged users are: system administrators, developers, security personnel, auditors, and multi-factor authentication service administrators.

System administrators are privileged users who can access login.gov from the GSA network or via cloud services. System administrators use their elevated privileges in support of account management, and to check system logs to ensure proper operation of the system and to detect potentially malicious activity. All system administrator functions require multi-factor authentication.

Developers are privileged users who have some access to login.gov from the GSA network, or via cloud services. Developers use their permissions to promote new versions of the login.gov software from one environment to another (e.g. from testing to production). All developer actions taken are logged and reported and all developer functions that interact with the production environments require multi-factor authentication. All code submissions require peer review and sign-off before they can be merged into the code-base for inclusion in future versions of the software.

Security personnel are privileged users who have access to the logs generated from login.gov from the GSA network or via cloud services. Security personnel can create queries on logs from the production environment and generate alerts based on those queries. Security personnel only have access to the

production login.gov environment in order to perform emergency shutdown procedures. All security personnel functions that interact with production systems require multi-factor authentication.

Auditors are privileged users who have access to "read" but not alter the state and data of login.gov systems. Auditors can query machines in the production environment, and report data from those queries. All auditor actions in production systems require multi-factor authentication. All auditor actions are logged and reported upon.

Multi-factor authentication service administrators are privileged users with access to the third-party tools used for sending each user a one-time security code.

As discussed above, login.gov only shares the user's email address and agency UUID with partner agencies after the user consents to that sharing. If provided, the user's phone number is provided to a multi-factor authentication service provider to enable multi-factor authentication as a security measure. These user actions are logged to allow auditing against any unauthorized access to the system, since it could be possible to obtain a valid one-time security code for an account via administrative access to these systems.

To facilitate identity proofing, login.gov will share the user's full name, date of birth, address, social security number, state ID number and type, and phone number with third-party providers only after the user consents to that sharing.

3.6 Will the system, application or project monitor the public, GSA employees or contractors?

login.gov will not be used to monitor the public. login.gov has an analytics dashboard that tracks aggregate user activity. This dashboard is used to monitor business metrics and overall performance of the login.gov application but does not have access to user metadata or PII. All privileged users' actions on the system are monitored, logged, and reviewed as described in section 3.5.

3.7 What kinds of report(s) can be produced on individuals?

System administrators and security personnel can generate reports on an individual to investigate potential incidents, diagnose problems and for related purposes. For example, a privileged user can generate a report on user activity, such as a user's most recent sign-in, or which agencies a user has used login.gov to access, and which methods of multi-factor authentication the user has enabled for their account. These user activity reports can be generated based on any combination of analytics attributes that are tracked. Tracked attributes include master and agency UUID, IP address, session ID, user agent and related derived fields, event type, originating service provider, event type, and event-specific attributes such as whether a form validation passed or a user was rate limited. User-specific fields such as email and MFA phone are not tracked directly, but a database query can reveal the UUID associated with an email

or phone number, which can then be queried. login.gov also generates aggregated data reports about overall system health but these reports do not allow for monitoring of individual users.

The login.gov analytics dashboard generates reports and logs on population activity such as the percentage of successful sign-ins or the total number of users, and can be accessed by all privileged users. These reports do not include any metadata or PII. login.gov provides agency partners with access to similar types of reports for their application user population.

3.8 Will the data included in any report(s) be de-identified? If so, what process(es) will be used to aggregate or de-identify the data?

All login.gov traffic is subject to monitoring and recording to identify unauthorized attempts to change information, jeopardize the confidentiality, integrity or availability of login.gov or otherwise cause damage. Information included in security reports may include IP addresses, master and agency UUID, and user agents that access login.gov.

3.9 Are there any privacy risks for this system, application or project that relate to data minimization? If so, how will GSA mitigate these risks?

The information collected to create an LOA1 account and enable multifactor authentication is used only to provide secure account access and to identify the user account to partner agencies. The additional set of data collected to authenticate a login.gov account to LOA3 is only used to establish that user's identity and associate it with their login.gov account, and to provide enough information to partner agencies for them to create accounts for those users on their integrated services.

Potential Privacy Risk: Will login.gov collect additional PII from a user's PIV/CAC?

Mitigation: login.gov will only use a PIV/CAC as a second factor authentication method and will not use it for authorization or identification. To verify that the PIV/CAC provided as the second factor is the correct PIV/CAC, login.gov will store a SHA-512 hash of the PIV/CAC certificate subject to be validated against the transmitted public certificate. No additional PII will be collected or stored from the PIV/CAC.[20]

Potential Privacy Risk: Could login.gov collect more PII from a user than is necessary to provide to the partner agency whose service they wish to use?

Mitigation: login.gov creates an account for each user whose identity is authenticated based on records maintained by third-party services that validate the information a user self-asserts. login.gov collects a

[20] As discussed in section 6.5, login.gov temporarily stores the public certificate only if it cannot verify the validity of the certificate. For example, if login.gov does not have the signing certificate in its reference library, the certificate is expired, or the certificate is revoked, then the system will temporarily store it for further review and maintenance purposes.

standard set of PII for LOA3 proofing, as described in section 1.1. However, login.gov will only share the specific subset of attributes that are required by that agency for the user to access that agency's services and information. These attributes are negotiated with the agency service provider during their initial integration with login.gov. Login makes this information available to the partner agency every time the user is handed off to that agency. The first time information is made available to the partner agency, the user is shown what data will be shared and asked to confirm that they consent to sharing that data.

SECTION 4.0 LIMITS ON USES AND SHARING OF INFORMATION

GSA publishes a notice about how it plans to use and share any PII it collects. GSA only shares PII in ways that are compatible with the notice or as stated in the Privacy Act.

4.1 Is the information in the system, application or project limited to only the information that is needed to carry out the purpose of the collection?

Yes, PII collected is only for the purpose of account creation and identity proofing.

PII Categories	LOA1	LOA3	Purpose
Email Address	**Yes**	**Yes**	Establish account
Master Universally Unique Identifier (UUID) or MBUN	**Yes**	**Yes**	Assigned for account identification
Agency UUID	**Yes**	**Yes**	Assigned for account identification
Phone Number for multi-factor authentication (MFA)	**Yes**	**Yes**	Enable multi-factor authentication
PIV/CAC subject	**Yes**	**Yes**	Enable multi-factor authentication
Full Name	**No**	**Yes**	Identity resolution
Address	**No**	**Yes**	Identity verification
Date of Birth	**No**	**Yes**	Identity resolution
Social Security Number	**No**	**Yes**	Identity resolution
State-issued ID Number and Type	**No**	**Yes**	Identity verification
Contact Phone Number	**Only if same phone number as MFA number**	**Yes**	Verify state-issued ID address

4.2 Will GSA share any of the information with other individuals, Federal and/or state agencies, or private sector organizations? If so, how will GSA share the information?

With the user's consent, the user's email address and agency UUID will be shared with a partner agency. If the partner agency requires identity proofing information for users authenticating via login.gov, then those users' self-asserted PII, including name, address, social security number, birth date and/or contact phone number could also be transmitted pursuant to the user's consent and the agreement between login.gov and the partner agency. That information is encrypted during transit using Transport Layer Security over Hypertext Transfer Protocol Secure (TLS over HTTPS) and inside either a Security Assertion Markup Language (SAML) or OpenID Connect (OIDC) signed payload. The user's phone number for calls or text messages from the third-party multi-factor authentication service provider and additional information required for LOA3 identity proofing are also encrypted using TLS over HTTPS during transmission.

4.3 Is the information collected directly from the individual or is it taken from another source? If so, what is the other source(s)?

The information is collected directly from the individual. Any user information shared with a partner agency is disclosed only pursuant to user consent. Third-party providers only verify the information provided by the user and do not provide any information to partner agencies. Third party identity proofing services only send the following information back to login.gov: transaction ID; pass/fail indicator; date/time of transaction; and codes associated with the transaction data.

4.4 Will the project interact with other systems, either within or outside of GSA? If so, what is the other system(s)? If so, how? If so, is a formal agreement(s) in place?

No. Other systems do not have access to the information in the system. login.gov only shares information when a user authorizes the system to transmit information to a partner agency or third-party provider.

4.5 Are there any privacy risks for this project that relate to use limitation? If so, how will GSA mitigate these risks?

Potential Privacy Risk: A user may not recognize the login.gov interface when trying to access a partner agency's services or understand why the system is asking for the information it does.

Mitigation: login.gov designers have conducted usability testing to decrease the risk that users don't have adequate prompts and explanations for what is happening. See section 5, below. The web-based interface provides visual cues and instructions while links to the Privacy Policy and this PIA explain the overall purpose of the system. Additionally, login.gov designers conduct regular usability testing for functional

upgrades to further their understanding of how and why users encounter problems.

SECTION 5.0 DATA QUALITY AND INTEGRITY

GSA makes reasonable efforts to ensure that all PII it maintains is accurate, relevant, timely, and complete.

5.1 How will the information collected be verified for accuracy and completeness?

The source of the PII is the individual. PII collected for LOA1 account creation does not require verification (i.e. it is self-asserted and presumed pseudonymous). login.gov ensures the accuracy and completeness of the user's email address and phone number (if provided for MFA) by requiring the user to confirm their email address and entering the one-time security code provided to them.

PII for LOA3 accounts is verified by matching the user's self-asserted information against other records to establish a level of confidence that the PII represents who the person claims to be. login.gov will contact a number of third-party identity-proofing services to verify the user provided PII. Each third-party identity-proofing service will return identity verification or resolution pass/fail information based on the user-provided data. Only after a user has been able to proof themselves to LOA3 standards will they be allowed to use login.gov to connect to partner agency services that require identity proofing.

5.2 Are there any privacy risks for individuals whose information is collected or used by the project that relate to data quality and integrity? If so, how will GSA mitigate these risks?

Potential Privacy Risk: A user undergoing identity proofing to LOA3 may not be verified properly by the third-party identity-proofing services used by login.gov.

Mitigation: login.gov will attempt to identity proof individuals for LOA3 accounts using multiple sources. However, these sources are not always the issuing source for a piece of identification. If the third-party identity-proofing services are unable to appropriately verify a user's identity, the user remains able to request the partner agency service through other methods provided by the partner agency. login.gov does not provide updates as an authoritative source of information to any third party identity-proofing service or provider. login.gov provides only the user-provided identity information and receives the verification response from the third party identity proofing service in return.

SECTION 6.0 SECURITY

GSA protects PII from loss, unauthorized access or use, destruction, modification, or unintended or inappropriate disclosure.

6.1 Who will have access to the data in the system, application or project? What is the authorization process for access to the project?

Developers, auditors and security personnel, both employee and contractor, may access a user's email address and optional MFA phone number for system maintenance, troubleshooting and incident response purposes only. Additionally, these personnel can verify both the user's last successful authentication time and which agency partners the user's credentials were disclosed to. This data is only accessed to diagnose system issues, and only if other attempts at remediating the issue have failed. Additionally, users who use a PIV/CAC as a multi-factor method may have their PIV/CAC public certificate stored temporarily and accessed by privileged users in the event that the certificate could not be properly validated, as discussed in section 6.5. PII aside from email address and optional MFA phone number is encrypted and inaccessible to the login.gov system without the user's password and a successful authentication by the user. login.gov systems will only keep the data unencrypted in memory for the minimum time necessary.

6.2 Has GSA completed a system security plan for the information system(s) supporting the project?

Yes. GSA has completed a system security plan for login.gov, which is designated as a FISMA "moderate" impact system and has a GSA-issued authority to operate (ATO) in place.

6.3 How will the system, application or project be secured from a physical, technological, and managerial perspective?

login.gov's physical security is provided by its cloud service provider. login.gov's cloud service provider is FedRAMP authorized, and has provided login.gov with a set of virtual private clouds to separate it from other physical assets.

login.gov manages technological security via a defense-in-depth approach, minimizing access at every level, with strong encryption of data both in transit and at rest. By maintaining strict control over the flow of information at every step within the system, login.gov is able to provide robust technical security. Additionally, other services run on top of login.gov to further detect any compromised systems, atypical system behavior, and/or data disclosure.

login.gov manages security from three aspects of control: auditing of access, vetting of privileged users, and enforcing principles of least-privileged access. By keeping all audit logs for any action taken as a privileged user on login.gov systems, there is a detailed history maintained to determine who made

changes and when. By using background check investigations for privileged users, login.gov seeks to grant access only to those who exhibit a high level of trustworthiness. By maintaining least-privileged access, login.gov restricts access to the minimum required levels, decreasing the risk of unauthorized disclosure or abuse. Additionally, all of these managerial controls are subject to regular review.

6.4 Are there mechanisms in place to identify security incidents and breaches of PII? If so, what are they?

Yes, login.gov has an incident response plan and conducts incident and breach response exercises. Additionally, the system uses tools from the cloud service provider that heuristically detect both security incidents and potential breaches of PII. These tools both offer additional insight on avenues of breach that may not be alarmed directly, and provide real-time insight about trends and flows of data to further enhance responsiveness.

6.5 Are there any privacy risks for this system that relate to security? If so, how will GSA mitigate these risks?

Potential Privacy Risk: Could a user's PII be accessible by privileged users, as described in section 6.1, who do not have a need to know it?

Mitigation: To decrease the risk of unnecessary access to PII, the system only allows privileged, vetted users to access email addresses, multi-factor authentication phone numbers, or PIV/CAC public certificates for maintenance and troubleshooting purposes. All such access is logged and audited.

Both the user's password and recovery codes are one-way hashed within the system. Hashing is a process of transforming strings of characters (i.e. the user's password and recovery codes) into fixed-length values that represent the original, but can be very difficult to reverse.[21]

When a user provides PII to login.gov specific to LOA3 authentication, the system combines the one-way hash of a user's password, and an AES-256 cryptographic cipher from login.gov's cloud service provider's Key Management Service (KMS) to wrap and protect the user's PII. Decrypting any user's PII would require access to the login.gov cloud environment's KMS resources as well as that user's password.

During the identity proofing process that takes place between login.gov and third-party identity proofing services, login.gov does not retain a user's responses to any questions posed by a third-party identity proofing service.

Potential Privacy Risk: Could a government employee's PIV/CAC card information be at risk in transit?

[21] To hash passwords and recovery codes, login.gov builds a consumer encryption key from an SCrypt digest of the password and a random value. The stored hash is the result of the taking a SHA256 digest of the consumer encryption key.

Mitigation: If a government employee uses a PIV/CAC card as a second factor, the public certificate from the card will be transmitted to login.gov as part of the login process. Authenticating PIV/CAC cards as an authentication factor requires using Transport Layer Security (TLS) client authentication, which exposes the contents of the certificate in plaintext on the network during negotiation of the TLS connection. The public certificate contains government employee information in the form of the "subject" of the public key containing the "Canonical Name" (i.e. full name), "Organization", and "Organization Unit" (corresponding to the card holder's full name, "U.S. Government", and top-level department name). This could expose the fact that a particular person uses login.gov, to an entity who can observe that user's network connection to login.gov.

login.gov cannot technically mitigate this risk, but accepts it in order to deliver improved security to users who choose to use their PIV/CAC card as an additional factor. The use of TLS client authentication makes PIV/CAC factors more resistant to sophisticated phishing attacks than other factors available to login.gov users, such as short message service (SMS) or time-based one-time password (TOTP). For example, when using SMS or TOTP, a phishing website may try to act as a "man in the middle" and seek to relay a user's SMS and TOTP codes back and forth as necessary between a user and login.gov to fraudulently complete the authentication process. When using PIV/CAC, the client's authentication is bound to the TLS session itself, and a phishing website will be unable to create a TLS session with login.gov that reproduces this client authentication.

In addition, login.gov generally does not store the public certificate in its original form.[22] Instead the PIV/CAC service pool stores a one-way hash of the public certificate's subject to be able to perform a lookup against a list of the hashes which correspond to a separate UUID (a MBUN) for the PIV/CAC service. That PIV/CAC UUID is then passed to the login.gov IdP service, as the unique identifier to allow for correlating a specific PIV/CAC for validation with the IdP service as a registered MFA method for that account.

[22] login.gov temporarily stores the public certificate only if it cannot verify the validity of the certificate. For example, if login.gov does not have the signing certificate in its reference library, the certificate is expired, or the certificate is revoked, then the system will temporarily store it for further review and maintenance purposes.

SECTION 7.0 INDIVIDUAL PARTICIPATION

GSA provides individuals the ability to access their PII and to correct or amend it if it is inaccurate. If GSA exempts a system or program from access, amendment and other provisions of the Privacy Act, it notifies the public of that exemption.

7.1 What opportunities are available for individuals to consent to uses, decline to provide information or opt out of the project? If no opportunities exist to consent, decline or opt out, please explain.

login.gov only gathers PII directly from the user during account creation or when the user is modifying their information. A user must also opt in to share any information with each partner agency. For example, when a user navigates to a partner agency's website to access it via login.gov, that user is provided an opportunity to consent to that partner agency's use of the user's email address, UUID and potentially other information as required by the partner agency.

login.gov provides a Privacy Act Notice with links to its security practices and Privacy Act statement on the sign in and create account page for both LOA1 and LOA3 accounts. Partner agency branding is also included throughout the sign in and create account process to ensure the user knows which agency login.gov they are disclosing information to.

7.2 What procedures allow individuals to access their information?

Individuals with a login.gov account can sign into their account at any time to access their information when they present their email address, password, and multi-factor method.

If an LOA1 user loses their password, they can reset it through access to their email and presentation of their multi-factor method. If an LOA1 user loses access to their multi-factor authentication method, the user can access their account using their personal key. If the user does not have access to their personal key, they can request to delete their account without signing in. When a user requests to delete their account, login.gov sends a notification to the email and the phone number associated with the account, if provided for MFA purposes. As a security measure, the user must wait 24 hours after submitting the request before deleting the account. After 24 hours, the user will receive a second email with a link to confirm the account deletion. Completing this process will allow the user to reset their login.gov account using the same email address. However, deleting the account removes any agency applications previously linked to the account.

If an LOA3 user loses access to their password, they can reset it through access to their email and presentation of their multi-factor method. If an LOA3 user loses access to their multi-factor authentication method, the user can access their account using their personal key. If an LOA3 user does not have access to their personal key, they will not be able to regain access to their login.gov account.

7.3 Can individuals amend information about themselves in the system? If so, how?

The login.gov account page allows a user to update or amend any PII in the system used for account authentication (email address or optional multi-factor phone number). The user is also able to view their account history as well as delete their account. To amend the additional PII that is used for LOA3 verification, the user must delete their account, and then create a new account and reproof.

System administrators and other privileged users have no access to modify PII on a user's behalf. The user retains full control of their data and the means to update it.

7.4 Are there any privacy risks for this system that relate to individual participation? If so, how will GSA mitigate these risks?

Potential Privacy Risk: Can users easily navigate to their login.gov account page to amend PII or delete information?

Mitigation: login.gov conducts usability testing (see section 4.5) to attempt to increase ease of use. Nonetheless, users might change PII on a partner agency application and mistakenly think they have amended their login.gov data. Potential confusion could be the a result of login.gov having a separate sign in page to access a user's account page. login.gov uses branding to clarify the difference between login.gov and the partner agency application's functionality, and only stores PII data that has been verified by an authoritative source. For a change to user PII, such as a new address or a name change, users can delete their account through their login.gov account screen, create a new account, and re-proof.

SECTION 8.0 AWARENESS AND TRAINING

GSA trains its personnel to handle and protect PII properly.

8.1 Describe what privacy training is provided to users, either generally or specifically relevant to the project.

All GSA personnel are trained on how to identify and safeguard PII. In addition, each employee must complete annual privacy and security training. Many staff receive additional training focused on their specific job duties. Those who need to access, use, or share PII as part of their regular responsibilities complete additional role-based training; for example, annual training in privacy by design.

8.2 Are there any privacy risks for this system that relate to awareness and training? If so, how will GSA mitigate these risks?

Potential Privacy Risk: Is the required training for GSA personnel adequate and effective in terms of content and structure?

Mitigation: Yes, GSA's mandatory IT Security and Privacy Training courses are designed to provide a complete overview of how to identify, handle and protect PII properly In addition to the training required by GSA, login.gov limits the use of access to user PII through strict permission sets and maintains audit logs of employee and contractor activity. This is applied to data stored on the login.gov platform as well as PII gathered from users across customer service channels. All employees and contractors are also trained to immediately report suspected or confirmed IT security incidents and PII breaches and any inappropriate use of GSA systems to the GSA IT Service Desk.

SECTION 9.0 ACCOUNTABILITY AND AUDITING

GSA's privacy program is designed to make the agency accountable for complying with these principles. GSA regularly checks that it is meeting the requirements and takes appropriate action if it is not.

9.1 How does the system ensure that the information is used in accordance with the stated practices in this PIA?

login.gov regularly reviews its operations to ensure that they meet the requirements outlined in this PIA. Program leaders and developers are held accountable for adhering to privacy best practices related to data minimization, transparency, and timely, effective notice. For example, login.gov has created a transparent system built upon an open-source platform so that interested parties can advise the program. Further, login.gov is building a system that tells users what it does with their information to create accountability and build trust. It engages developers and other interested parties through a public source code repository, which includes a public forum for discussion of the project.

9.2 Are there any privacy risks for this system that relate to accountability and auditing? If so, how will GSA mitigate these risks?

As discussed above, login.gov has adopted a privacy by design model and works closely with security and privacy advisors to ensure that it identifies potential privacy risks early and mitigates them in a timely, efficient fashion. login.gov recognizes that the success of the project requires maintaining the public trust, and has adopted modern privacy practices and a transparent, open-source development platform.