

# FedRAMP FedRAMP 20x All Impact Requirements

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## Definitions

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### FRD-ALL-01

**Federal Customer Data:** All electronic information, content, and materials that an *agency* or its authorized users upload, store, or otherwise provide to a cloud service for processing or storage. This does NOT include account information, service metadata, analytics, telemetry, or other similar metadata generated by the cloud service provider.

*Note: In the context of FedRAMP authorization, "federal customer data" ONLY ever refers to data owned by federal agency customers. Agreements and contracts with specific \_agencies may require providers to protect additional data or even transfer ownership of telemetry or usage data to the agency; always consult a lawyer that is familiar with company agreements and contracts when determining the scope of federal customer data.\_*

### FRD-ALL-02

**Information Resource:** Has the meaning from 44 USC § 3502 (6): "information and related resources, such as personnel, equipment, funds, and information technology."

*Note: This applies to any aspect of the \_cloud service offering, both technical and managerial, including everything that makes up the business of the offering from organizational policies and procedures to hardware, software, and code.\_*

*Reference: 44 USC § 3502 (6)*

### FRD-ALL-03

**Handle:** Has the plain language meaning inclusive of any possible action taken with information, such as access, collect, control, create, display, disclose, disseminate, dispose, maintain, manipulate, process, receive, review, store, transmit, use... etc.

### FRD-ALL-04

**Likely:** A reasonable degree of probability based on context.

### FRD-ALL-05

**Third-party Information Resource:** Any *information resource* that is not entirely included in the assessment for the *cloud service offering* seeking authorization.

### FRD-ALL-06

**Cloud Service Offering:** A specific, packaged cloud computing product or service provided by a cloud service provider that can be used by a customer. FedRAMP assessment and authorization of the cloud computing product or service is based on the Minimum Assessment Standard.

## FRD-ALL-07

**Regularly:** Performing the activity on a consistent, predictable, and repeated basis, at set intervals, automatically if possible, following a documented plan. These intervals may vary as appropriate between different requirements.

## FRD-ALL-08

**Significant change:** Has the meaning given in NIST SP 800-37 Rev. 2 which is "a change that is *likely* to substantively affect the security or privacy posture of a system."

*Reference: NIST SP 800-37 Rev. 2*

## FRD-ALL-09

**Routine Recurring:** The type of *significant change* that *regularly* and routinely recurs as part of ongoing operations, vulnerability mitigation, or vulnerability remediation.

## FRD-ALL-10

**Adaptive:** The type of *significant change* that does not routinely recur but does not introduce substantive potential security risks that need to be assessed in depth.

*Note: Adaptive changes typically require careful planning that focuses on engineering execution instead of customer adoption, can be verified with minor changes to existing automated validation procedures, and do not require large changes to operational procedures, deployment plans, or documentation.*

## FRD-ALL-11

**Transformative:** The type of *significant change* that introduces substantive potential security risks that are *likely* to affect existing risk determinations and must be assessed in depth.

*Note: Transformative changes typically introduce major features or capabilities that may change how a customer uses the service (in whole or in part) and require extensive updates to security assessments, operational procedures, deployment plans, and documentation.*

## FRD-ALL-12

**Impact Categorization:** The type of *significant change* that is *likely* to increase or decrease the impact level categorization for the entire cloud service offering (e.g. from low to moderate or from high to moderate).

## FRD-ALL-13

**Interim Requirement:** A temporary requirement included as part of a FedRAMP Pilot or Beta Test that will *likely* be replaced, updated, or removed prior to the formal wide release of the requirement.

## FRD-ALL-14

**Authorization Package:** Has meaning from 44 USC § 3607 (b)(8) which is "the essential information that can be used by an agency to determine whether to authorize the operation of an information system or the use of a designated set of common controls for all cloud computing products and services authorized by FedRAMP."

*Note: In FedRAMP documentation, \_authorization package always refers to a FedRAMP authorization package unless otherwise specified.\_*

*Reference: 44 USC § 3607 (b)(8)*

## FRD-ALL-15

**Authorization data:** The collective information required by FedRAMP for initial and ongoing assessment and authorization of a *cloud service offering*, including the *authorization package*.

*Note: In FedRAMP documentation, \_authorization data always refers to FedRAMP authorization data unless otherwise specified.\_*

## FRD-ALL-16

**Trust Center:** A secure repository or service used by cloud service providers to store and share *authorization data*. *Trust centers* are the complete and definitive source for *authorization data* and must meet the requirements outlined in the FedRAMP *authorization data* Sharing Standard to be FedRAMP-compatible.

*Note: In FedRAMP documentation, all references to \_trust centers indicate FedRAMP-compatible trust centers unless otherwise specified.\_*

## FRD-ALL-17

**Machine-Readable:** Has the meaning from 44 U.S. Code § 3502 (18) which is "the term "machine-readable", when used with respect to data, means data in a format that can be easily processed by a computer without human intervention while ensuring no semantic meaning is lost"

*Reference: 44 U.S. Code § 3502 (18)*

## FRD-ALL-18

**All Necessary Parties:** All entities whose interests are affected directly by activity related to a specific *cloud service offering* in the context of a FedRAMP authorization. This always includes FedRAMP and any *agency* customer who is operating the *cloud service offering*, but may include additional parties depending on agreements made by the cloud service provider (such as consultants or third-party assessors). Potential *agency* customers or third-party cloud service providers should also be included in most cases but this is not a mandatory requirement under FedRAMP as ultimately the cloud service provider may choose who they wish to do business with.

## FRD-ALL-19

**Agency:** Has the meaning given in 44 U.S. Code § 3502 (1), which is "any executive department, military department, Government corporation, Government controlled corporation, or other establishment in the executive branch of the Government (including the Executive Office of the President), or any independent regulatory agency, but does not include—(A) the Government Accountability Office; (B) Federal Election Commission; (C) the governments of the District of Columbia and of the territories and possessions of the United States, and their various subdivisions; or (D) Government-owned contractor-operated facilities, including laboratories engaged in national defense research and production activities."

*Reference: 44 U.S. Code § 3502 (1)*

## FRD-ALL-20

**Vulnerability:** Has the meaning given to "security vulnerability" in 6 USC § 650 (25), which is "any attribute of hardware, software, process, or procedure that could enable or facilitate the defeat of [...] management, operational, and technical controls used to protect against an unauthorized effort to adversely affect the confidentiality, integrity, and availability of an information system or its information." This includes gaps in Rev5 controls and 20x Key Security Indicators, software vulnerabilities, misconfigurations, exposures, weak credentials, insecure services, and all other such potential weaknesses in protection (intentional or unintentional).

*Reference: 6 USC § 650 (25)*

## FRD-ALL-21

**Vulnerability Detection:** The systematic process of discovering and identifying security vulnerabilities in *information resources* through assessment, scanning, threat intelligence, vulnerability disclosure mechanisms, bug bounties, supply chain monitoring, and other capabilities. This process includes the initial discovery of a *vulnerability's* existence and the determination of affected *information resources* within a *cloud service offering*.

*Note: This definition applies to other forms such as "detect vulnerabilities" or simply "detection" / "detected" used in FedRAMP materials.*

## FRD-ALL-22

**Vulnerability Response:** The systematic process of tracking, evaluating, mitigating, monitoring, remediating, assessing exploitation, reporting, and otherwise managing detected *vulnerabilities*.

*Note: This definition applies to other forms such as "respond to vulnerabilities" or simply "response" / "responded" used in FedRAMP materials.*

## FRD-ALL-23

**Likely Exploitable Vulnerability (LEV):** A vulnerability that is not *fully mitigated*, AND is reachable by a *likely* threat actor, AND a *likely* threat actor with knowledge of the *vulnerability* would likely be able to gain unauthorized access, cause harm, disrupt operations, or otherwise have an undesired adverse impact within the *cloud service offering* by exploiting the *vulnerability*.

*Notes:*

- *The opposite of this is a "Not Likely Exploitable Vulnerability" (NLEV).*
- *At the absolute minimum, any \_vulnerability that an automated unauthenticated system can exploit over the internet is a likely exploitable vulnerability.\_*

## FRD-ALL-24

**Internet-Reachable Vulnerability (IRV):** A *vulnerability* in a machine-based *information resource* that might be exploited or otherwise triggered by a payload originating from a source on the public internet; this includes machine-based *information resources* that have no direct route to/from the internet but receive payloads or otherwise take action triggered by internet activity.

*Notes:*

- *The opposite of this is a "Not Internet-reachable Vulnerability" (NIRV).*
- *Internet-reachability applies only to the specific vulnerable machine-based \_information resources processing the payload; please review the relevant FedRAMP technical assistance on internet-reachable vulnerabilities for examples.\_*

## FRD-ALL-25

**Known Exploited Vulnerability (KEV):** Has the meaning given in CISA Binding Operational Directive 22-01, which is any *vulnerability* identified in CISA's Known Exploited Vulnerabilities catalog.

*Reference: CISA BOD 22-01*

## FRD-ALL-26

**Remediated Vulnerability:** A *vulnerability* that has been neutralized or eliminated and is no longer *detected*.

#### FRD-ALL-27

**Partially Mitigated Vulnerability:** A *vulnerability* where the likelihood or *potential adverse impact* of exploitation has been reduced from the original evaluation but the risk of exploitation still exists and the *vulnerability* is still *detected*.

#### FRD-ALL-28

**Fully Mitigated Vulnerability:** A *vulnerability* where the likelihood of exploitation or *potential adverse impact* of exploitation has been reduced from the original evaluation until either are negligible, but the *vulnerability* is still *detected*.

#### FRD-ALL-29

**False Positive Vulnerability:** A *detected vulnerability* that is not actually present in an exploitable state in the *information resource*; this includes situations where vulnerable software or code exist on an machine-based *information resource* but are not loaded, running, or otherwise in an operating state required for exploitation.

*Note: This only applies if the \_vulnerability is not and was not present; a remediated vulnerability or a fully mitigated vulnerability cannot also be a false positive vulnerability.\_*

#### FRD-ALL-30

**Overdue Vulnerability:** A *vulnerability* that the provider intends to *fully mitigate* or *remediate* but has not or will not do so within the time frames recommended or required by FedRAMP.

#### FRD-ALL-31

**Accepted Vulnerability:** A *vulnerability* that the provider does not intend to *fully mitigate* or *remediate*, OR that has not or will not be *fully mitigated* or *remediated* within the maximum overdue period recommended or required by FedRAMP.

#### FRD-ALL-32

**Catastrophic Adverse Effect:** A severe negative impact on an organization caused by the loss of confidentiality, integrity, or availability of its information. At a minimum, this includes effects that would *likely*: (i) result in a severe degradation in the availability or performance of services within the *cloud service offering* for 24+ hours; OR (ii) directly or indirectly result in unauthorized access, disclosure, or modification of a majority of the *federal customer data* stored within the *cloud service offering*.

#### FRD-ALL-33

**Serious Adverse Effect:** A significant negative impact on an organization caused by the loss of confidentiality, integrity, or availability of its information. At a minimum, this includes effects that would likely: (i) result in intermittent or ongoing degradation in the availability or performance of services within the *cloud service offering*, causing unpredictable interruptions to operations for 12+ hours; OR (ii) directly or indirectly result in unauthorized access, disclosure, or modification of a minority of the *federal customer data* stored within the *cloud service offering*.

#### FRD-ALL-34

**Limited Adverse Effect:** A minor negative impact on an organization caused by the loss of confidentiality, integrity, or availability of its information. At a minimum, this includes effects that would likely: (i) result in degradation of the availability or performance of services within the *cloud service offering* for a minority of relevant users; OR (ii) directly or indirectly result in unauthorized access, disclosure, or modification of a small amount of the *federal customer data* stored within the *cloud service offering* by only a few relevant users.

#### FRD-ALL-35

**Negligible Adverse Effect:** A small negative impact on an organization caused by the loss of confidentiality, integrity, or availability of its information. At a minimum, this includes effects that would likely: (i) result in minor inconvenience when accessing or using services within the *cloud service offering*; OR (ii) result in degradation of the availability or performance of services within the *cloud service offering* for only a few relevant users.

#### FRD-ALL-36

**Potential Adverse Impact (of vulnerability exploitation):** The estimated cumulative effect of unauthorized access, disruption, harm, or other adverse impact to agencies that *likely* could result if a threat actor exploits a *vulnerability* in the *cloud service offering*; as estimated following FedRAMP recommendations and requirements.

#### FRD-ALL-37

**Promptly:** Without Unnecessary Delay.

*Note: The use of \_promptly in FedRAMP materials frames conveys a need for urgent action where the expected time frame will vary by circumstance but earlier action is more likely to improve security outcomes and increase the security posture of a cloud service offering.\_*

#### FRD-ALL-38

**Persistently:** Occurring in a firm, steady way that is repeated over a long period of time in spite of obstacles or difficulties. Persistent activities may vary between actors, may occur irregularly, and may include interruptions or waiting periods between cycles. These attributes of persistent activities should be intentional, understood, and documented; the status of persistent activities will always be known.

*Note: The use of \_persistently indicates a process that may not always occur continuously (without interruption or gaps) or regularly (on a consistent, predictable basis) but will repeat frequently in cycles. It aligns generally with historical misuse of "continuous" in federal information security policies.\_*

#### FRD-ALL-39

**Drift:** Changes to *information resources* that cause deviations from the intended and assessed state; common forms of drift include changes to configurations, deployed software, privileges, running processes, and availability.

#### FRD-ALL-40

**Incident:** Has the meaning given in 44 USC § 3552 (b)(2) applied to federal customer data, which is "an occurrence that (A) actually or imminently jeopardizes, without lawful authority, the integrity, confidentiality, or availability of [federal customer data]; or (B) constitutes a violation or imminent threat of violation of law, security policies, security procedures, or acceptable use policies [related to federal customer data]."

*Reference: 44 USC § 3552 (b)(2)*

#### FRD-ALL-41

**Top-level administrative account:** The most privileged account with the highest level of access within a *cloud service offering* for a customer organization, typically with complete control over all aspects of the *cloud service offering*, including managing resources, users, access, privileges, and the account itself.

*Note: Any references to \_top-level administrative accounts in FedRAMP materials should be presumed to apply to top-level administrative roles or other similar capabilities that are used to assign top-level administrative account privileges.\_*

#### **FRD-ALL-42**

**Privileged account:** An account with elevated privileges that enables administrative functions over some aspect of the *cloud service offering* that may affect the confidentiality, integrity, or availability of information beyond those given to normal users; levels of privilege may vary wildly.

*Note: Any references to *privileged accounts* in FedRAMP materials should be presumed to apply to privileged roles or other similar capabilities that are used to assign privileges to *privileged accounts*.*

#### **FRD-ALL-43**

**Ongoing Authorization Report:** A *regular* report that is supplied by FedRAMP Authorized cloud service providers to agency customers, aligned to the requirements and recommendations in the FedRAMP Collaborative Continuous Monitoring Standard.

#### **FRD-ALL-44**

**Quarterly Review:** A *regular* synchronous meeting hosted by a FedRAMP Authorized cloud service provider for agency customers, aligned to the requirements and recommendations in the FedRAMP Collaborative Continuous Monitoring Standard.

## **Requirements and Recommendations**

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### **FRR-ADS**

**These requirements apply ALWAYS to ALL FedRAMP Authorized cloud services based on the current Effective Date(s) and Overall Applicability of this standard.**

#### **FRR-ADS-01**

*Applies to:* Low, Moderate, High

Providers MUST publicly share up-to-date information about the *cloud service offering* in both human-readable and *machine-readable* formats, including at least:

1. Direct link to the FedRAMP Marketplace for the offering
2. Service Model
3. Deployment Model
4. Business Category
5. UEI Number
6. Contact Information
7. Overall Service Description
8. Detailed list of specific services and their impact levels (see FRR-ADS-03)
9. Summary of customer responsibilities and secure configuration guidance
10. Process for accessing information in the *trust center* (if applicable)
11. Availability status and recent disruptions for the *trust center* (if applicable)
12. Customer support information for the *trust center* (if applicable)

#### **FRR-ADS-02**

*Applies to:* Low, Moderate, High

Providers MUST use automation to ensure information remains consistent between human-readable and *machine-readable* formats when *authorization data* is provided in both formats; Providers SHOULD generate human-readable

and *machine-readable* data from the same source at the same time OR generate human-readable formats directly from *machine-readable* data.

#### FRR-ADS-03

*Applies to:* Low, Moderate, High

Providers MUST share a detailed list of specific services and their impact levels that are included in the *cloud service offering* using clear feature or service names that align with standard public marketing materials; this list MUST be complete enough for a potential customer to determine which services are and are not included in the FedRAMP authorization without requesting access to underlying *authorization data*.

#### FRR-ADS-04

*Applies to:* Low, Moderate, High

Providers MUST share *authorization data* with all necessary parties without interruption, including at least FedRAMP, CISA, and agency customers.

#### FRR-ADS-05

*Applies to:* Low, Moderate, High

Providers MUST provide sufficient information in *authorization data* to support authorization decisions but SHOULD NOT include sensitive information that would *likely* enable a threat actor to gain unauthorized access, cause harm, disrupt operations, or otherwise have a negative adverse impact on the *cloud service offering*.

#### FRR-ADS-06

*Applies to:* Low, Moderate, High

Providers of FedRAMP Rev5 Authorized *cloud service offerings* MUST share *authorization data* via the USDA Connect Community Portal UNLESS they use a FedRAMP-compatible *trust center*.

#### FRR-ADS-07

*Applies to:* Low, Moderate, High

Providers of FedRAMP 20x Authorized *cloud service offerings* MUST use a FedRAMP-compatible *trust center* to store and share *authorization data* with all necessary parties.

#### FRR-ADS-08

*Applies to:* Low, Moderate, High

Providers MUST notify all necessary parties when migrating to a *trust center* and MUST provide information in their existing USDA Connect Community Portal secure folders explaining how to use the *trust center* to obtain *authorization data*.

#### FRR-ADS-09

*Applies to:* Low, Moderate, High

Providers MUST make historical versions of *authorization data* available for three years to all necessary parties UNLESS otherwise specified by applicable FedRAMP requirements; deltas between versions MAY be consolidated quarterly.

## FRR-ADS-10

*Applies to:* Low, Moderate, High

Providers SHOULD follow FedRAMP's best practices and technical assistance for sharing *authorization data* where applicable.

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## FRR-ADS-AC

**These requirements for managing access apply to cloud service providers who establish FedRAMP-compatible *trust centers* for storing and sharing *authorization data*.**

### FRR-ADS-AC-01

*Applies to:* Low, Moderate, High

Providers MUST publicly provide plain-language policies and guidance for all necessary parties that explains how they can obtain and manage access to *authorization data* stored in the *trust center*.

### FRR-ADS-AC-02

*Applies to:* Low, Moderate, High

Providers SHOULD share at least the *authorization package* with prospective agency customers upon request and MUST notify FedRAMP within five business days if a prospective agency customer request is denied.

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## FRR-ADS-TC

**These requirements apply to FedRAMP-compatible *trust centers* used to store and share *authorization data*.**

### FRR-ADS-TC-01

*Applies to:* Low, Moderate, High

*Trust centers* MUST be included as an *information resource* included in the *cloud service offering* for assessment if FRR-MAS-01 applies.

### FRR-ADS-TC-02

*Applies to:* Low, Moderate, High

*Trust centers* SHOULD make *authorization data* available to view and download in both human-readable and *machine-readable* formats

### FRR-ADS-TC-03

*Applies to:* Low, Moderate, High

*Trust centers* MUST provide documented programmatic access to all *authorization data*, including programmatic access to human-readable materials.

#### FRR-ADS-TC-04

*Applies to:* Low, Moderate, High

*Trust centers SHOULD include features that encourage all necessary parties to provision and manage access to *authorization data* for their users and services directly.*

#### FRR-ADS-TC-05

*Applies to:* Low, Moderate, High

*Trust centers MUST maintain an inventory and history of federal agency users or systems with access to *authorization data* and MUST make this information available to FedRAMP without interruption.*

#### FRR-ADS-TC-06

*Applies to:* Low, Moderate, High

*Trust centers MUST log access to *authorization data* and store summaries of access for at least six months; such information, as it pertains to specific parties, SHOULD be made available upon request by those parties.*

#### FRR-ADS-TC-07

*Applies to:* Low, Moderate, High

*Trust centers SHOULD deliver responsive performance during normal operating conditions and minimize service disruptions.*

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### FRR-ADS-EX

**These exceptions MAY override some or all of the FedRAMP requirements for this standard.**

#### FRR-ADS-EX-01

*Applies to:* Low, Moderate, High

*Providers of FedRAMP Rev5 Authorized *cloud service offerings* at FedRAMP High using a legacy self-managed repository for *authorization data* MAY ignore the requirements in this standard until future notice.*

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### FRR-SCN

**These requirements apply ALWAYS to ALL *significant changes* based on current Effective Date(s) and Overall Applicability**

#### FRR-SCN-01

*Applies to:* Low, Moderate, High

*Providers MUST notify all necessary parties when Significant Change Notifications are required, including at least FedRAMP and all agency customers. Providers MAY share Significant Change Notifications publicly or with other parties.*

## **FRR-SCN-02**

*Applies to:* Low, Moderate, High

Providers MUST follow the procedures documented in their security plan to plan, evaluate, test, perform, assess, and document changes.

## **FRR-SCN-03**

*Applies to:* Low, Moderate, High

Providers MUST evaluate and type label all *significant changes*, then follow FedRAMP requirements for the type.

## **FRR-SCN-04**

*Applies to:* Low, Moderate, High

Providers MUST maintain auditable records of these activities and make them available to all necessary parties.

## **FRR-SCN-05**

*Applies to:* Low, Moderate, High

Providers MUST keep historical Significant Change Notifications available to all necessary parties at least until the service completes its next annual assessment.

## **FRR-SCN-06**

*Applies to:* Low, Moderate, High

All parties SHOULD follow FedRAMP's best practices and technical assistance on *significant change* assessment and notification where applicable.

## **FRR-SCN-07**

*Applies to:* Low, Moderate, High

Providers MAY notify necessary parties in a variety of ways as long as the mechanism for notification is clearly documented and easily accessible.

## **FRR-SCN-08**

*Applies to:* Low, Moderate, High

Providers MUST make ALL Significant Change Notifications and related audit records available in similar human-readable and compatible *machine-readable* formats.

## **FRR-SCN-09**

*Applies to:* Low, Moderate, High

Providers MUST include at least the following information in Significant Change Notifications:

1. Service Offering FedRAMP ID
2. 3PAO Name (if applicable)
3. Related POA&M (if applicable)
4. Significant Change type and explanation of categorization

5. Short description of change
6. Reason for change
7. Summary of customer impact, including changes to services and customer configuration responsibilities
8. Plan and timeline for the change, including for the verification, assessment, and/or validation of impacted Key Security Indicators or controls
9. Copy of the business or security impact analysis
10. Name and title of approver

#### FRR-SCN-10

Applies to: Low, Moderate, High

Providers MAY include additional relevant information in Significant Change Notifications.

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#### FRR-SCN-EX

These exceptions MAY override some or all of the FedRAMP requirements for this standard.

##### FRR-SCN-EX-01

Applies to: Low, Moderate, High

Providers MAY be required to delay *significant changes* beyond the standard Significant Change Notification period and/or submit *significant changes* for approval in advance as a condition of a formal FedRAMP Corrective Action Plan or other agreement.

##### FRR-SCN-EX-02

Applies to: Low, Moderate, High

Providers MAY execute *significant changes* (including *transformative changes*) during an emergency or incident without meeting Significant Change Notification requirements in advance ONLY if absolutely necessary. In such emergencies, providers MUST follow all relevant procedures, notify all necessary parties, retroactively provide all Significant Change Notification materials, and complete appropriate assessment after the incident.

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#### FRR-SCN-RR

These requirements apply ONLY to *significant changes* of type *routine recurring*.

##### FRR-SCN-RR-01

Applies to: Low, Moderate, High

Providers SHOULD NOT make formal Significant Change Notifications for *routine recurring* changes; this type of change is exempted from the notification requirements of this standard.

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#### FRR-SCN-AD

These requirements apply ONLY to *significant changes* of type *adaptive*.

## FRR-SCN-AD-01

*Applies to:* Low, Moderate, High

Providers MUST notify all necessary parties within ten business days after finishing *adaptive* changes, also including the following information:

1. Summary of any new risks identified and/or POA&Ms resulting from the change (if applicable)

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## FRR-SCN-TF

These requirements apply ONLY to *significant changes of type transformative*.

### FRR-SCN-TF-01

*Applies to:* Low, Moderate, High

Providers SHOULD engage a third-party assessor to review the scope and impact of the planned change before starting *transformative* changes if human validation is necessary. This review SHOULD be limited to security decisions that require human validation. Providers MUST document this decision and justification.

### FRR-SCN-TF-02

*Applies to:* Low, Moderate, High

Providers MUST notify all necessary parties of initial plans for *transformative* changes at least 30 business days before starting *transformative* changes.

### FRR-SCN-TF-03

*Applies to:* Low, Moderate, High

Providers MUST notify all necessary parties of final plans for *transformative* changes at least 10 business days before starting *transformative* changes.

### FRR-SCN-TF-04

*Applies to:* Low, Moderate, High

Providers MUST notify all necessary parties within 5 business days after finishing *transformative* changes, also including the following information:

1. Updates to all previously sent information

### FRR-SCN-TF-05

*Applies to:* Low, Moderate, High

Providers MUST notify all necessary parties within 5 business days after completing the verification, assessment, and/or validation of *transformative* changes, also including the following information:

1. Updates to all previously sent information
2. Summary of any new risks identified and/or POA&Ms resulting from the change (if applicable)
3. Copy of the security assessment report (if applicable)

## FRR-SCN-TF-06

*Applies to:* Low, Moderate, High

Providers MUST publish updated service documentation and other materials to reflect *transformative* changes within 30 business days after finishing *transformative* changes.

## FRR-SCN-TF-07

*Applies to:* Low, Moderate, High

Providers MUST allow agency customers to OPT OUT of *transformative* changes whenever feasible.

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## FRR-SCN-IM

**These requirements apply ONLY to *significant changes* of type *impact categorization*.**

### FRR-SCN-IM-01

*Applies to:* Low, Moderate, High

Providers MUST follow the legacy Significant Change Request process or full re-authorization for *impact categorization* changes, with advance approval from an identified lead agency, until further notice.

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## FRR-ICP

**These requirements and recommendations apply ALWAYS to ALL FedRAMP Authorized cloud services based on the current Effective Date(s) and Overall Applicability of this standard.**

### FRR-ICP-01

*Applies to:* Low, Moderate, High

Providers MUST responsibly report *incidents* to FedRAMP within 1 hour of identification by sending an email to [fedramp\\_security@fedramp.gov](mailto:fedramp_security@fedramp.gov) or fedramp\_security@gsa.gov.

### FRR-ICP-02

*Applies to:* Low, Moderate, High

Providers MUST responsibly report *incidents* to all agency customers within 1 hour of identification using the *incident* communications points of contact provided by each agency customer.

### FRR-ICP-03

*Applies to:* Low, Moderate, High

Providers MUST responsibly report *incidents* to CISA within 1 hour of identification if the incident is confirmed or suspected to be the result of an attack vector listed at <https://www.cisa.gov/federal-incident-notification-guidelines#attack-vectors-taxonomy>, following the CISA Federal Incident Notification Guidelines at <https://www.cisa.gov/federal-incident-notification-guidelines>, by using the CISA Incident Reporting System at <https://myservices.cisa.gov/irf>.

## FRR-ICP-04

*Applies to:* Low, Moderate, High

Providers MUST update *all necessary parties*, including at least FedRAMP, CISA (if applicable), and all agency customers, at least once per calendar day until the *incident* is resolved and recovery is complete.

## FRR-ICP-05

*Applies to:* Low, Moderate, High

Providers MUST make *incident* report information available in their secure FedRAMP repository (such as USDA Connect) or *trust center*.

## FRR-ICP-06

*Applies to:* Low, Moderate, High

Providers MUST NOT irresponsibly disclose specific sensitive information about *incidents* that would *likely* increase the impact of the *incident*, but MUST disclose sufficient information for informed risk-based decision-making to *all necessary parties*.

## FRR-ICP-07

*Applies to:* Low, Moderate, High

Providers MUST provide a final report once the *incident* is resolved and recovery is complete that describes at least:

1. What occurred
2. Root cause
3. Response
4. Lessons learned
5. Changes needed

## FRR-ICP-08

*Applies to:* Low, Moderate, High

Providers SHOULD use automated mechanisms for reporting incidents and providing updates to all necessary parties (including CISA).

## FRR-ICP-09

*Applies to:* Low, Moderate, High

Providers SHOULD make *incident* report information available in consistent human-readable and *machine-readable* formats.

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## FRR-MAS

**These requirements apply ALWAYS to ALL FedRAMP authorizations based on the Effective Date(s) and Overall Applicability.**

## FRR-MAS-01

*Applies to:* Low, Moderate, High

Providers MUST identify a set of *information resources* to assess for FedRAMP authorization that includes all *information resources* that are *likely* to *handle federal customer data* or *likely* to impact the confidentiality, integrity, or availability of *federal customer data handled by the cloud service offering*.

## FRR-MAS-02

*Applies to:* Low, Moderate, High

Providers MUST include the configuration and usage of *third-party information resources*, ONLY IF FRR-MAS-01 APPLIES.

## FRR-MAS-03

*Applies to:* Low, Moderate, High

Providers MUST clearly identify and document the justification, mitigation measures, compensating controls, and potential impact to *federal customer data* from the configuration and usage of non-FedRAMP authorized *third-party information resources*, ONLY IF FRR-MAS-01 APPLIES.

## FRR-MAS-04

*Applies to:* Low, Moderate, High

Providers MUST include metadata (including metadata about *federal customer data*), ONLY IF FRR-MAS-01 APPLIES.

## FRR-MAS-05

*Applies to:* Low, Moderate, High

Providers MUST clearly identify, document, and explain information flows and impact levels for ALL *information resources*, ONLY IF FRR-MAS-01 APPLIES.

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## FRR-MAS-EX

These exceptions MAY override some or all of the FedRAMP requirements for this standard.

### FRR-MAS-EX-01

*Applies to:* Low, Moderate, High

Providers MAY include documentation of *information resources* beyond the *cloud service offering*, or even entirely outside the scope of FedRAMP, in a FedRAMP assessment and *authorization package supplement*; these resources will not be FedRAMP authorized and MUST be clearly marked and separated from the *cloud service offering*.

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## FRR-MAS-AY

These rules provide general guidance on the application of this standard.

## FRR-MAS-AY-01

*Applies to:* Low, Moderate, High

Certain categories of cloud computing products and services are specified as entirely outside the scope of FedRAMP by the Director of the Office of Management and Budget. All such products and services are therefore not included in the *cloud service offering* for FedRAMP. For more, see [fedramp.gov/scope](http://fedramp.gov/scope).

## FRR-MAS-AY-02

*Applies to:* Low, Moderate, High

Software produced by cloud service providers that is delivered separately for installation on agency systems and not operated in a shared responsibility model (typically including agents, application clients, mobile applications, etc. that are not fully managed by the cloud service provider) is not a cloud computing product or service and is entirely outside the scope of FedRAMP under the FedRAMP Authorization Act. All such software is therefore not included in the *cloud service offering* for FedRAMP. For more, see [fedramp.gov/scope](http://fedramp.gov/scope).

## FRR-MAS-AY-03

*Applies to:* Low, Moderate, High

*Information resources* (including *third-party information resources*) that do not meet the conditions in FRR-MAS-01 are not included in the *cloud service offering* for FedRAMP (FRR-MAS-02).

## FRR-MAS-AY-04

*Applies to:* Low, Moderate, High

*Information resources* (including *third-party information resources*) MAY vary by impact level as appropriate to the level of information *handled* or impacted by the information resource (FRR-MAS-05).

## FRR-MAS-AY-05

*Applies to:* Low, Moderate, High

All parties SHOULD review best practices and technical assistance provided separately by FedRAMP for help with applying the Minimum Assessment Standard as needed.

## FRR-MAS-AY-06

*Applies to:* Low, Moderate, High

All aspects of the *cloud service offering* are determined and maintained by the cloud service provider in accordance with related FedRAMP authorization requirements and documented by the cloud service provider in their assessment and authorization materials.

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## FRR-VDR

**These requirements apply ALWAYS to ALL FedRAMP Authorized cloud services based on the current Effective Date(s) and Overall Applicability of this standard.**

## FRR-VDR-01

*Applies to:* Low, Moderate, High

Providers MUST systematically, persistently, and promptly discover and identify *vulnerabilities* within their *cloud service offering* using appropriate techniques such as assessment, scanning, threat intelligence, vulnerability disclosure mechanisms, bug bounties, supply chain monitoring, and other relevant capabilities; this process is called *vulnerability detection*.

#### FRR-VDR-02

*Applies to:* Low, Moderate, High

Providers MUST systematically, persistently, and promptly track, evaluate, monitor, *mitigate, remediate, assess exploitation of, report, and otherwise manage all detected vulnerabilities within their cloud service offering*; this process is called *vulnerability response*.

#### FRR-VDR-03

*Applies to:* Low, Moderate, High

Providers MUST follow the requirements and recommendations outlined in FRR-VDR-TF regarding timeframes for *vulnerability detection and response*.

*Note: Providers are strongly encouraged to build programs that consistently exceed these thresholds. Performance will be measured by FedRAMP for comparison between providers and scoring within the FedRAMP Marketplace.*

#### FRR-VDR-04

*Applies to:* Low, Moderate, High

Providers MAY sample effectively identical *information resources*, especially machine-based *information resources*, when performing *vulnerability detection* UNLESS doing so would decrease the efficiency or effectiveness of *vulnerability detection*.

#### FRR-VDR-05

*Applies to:* Low, Moderate, High

Providers SHOULD evaluate *detected vulnerabilities*, considering the context of the *cloud service offering*, to identify logical groupings of affected *information resources* that may improve the efficiency and effectiveness of *vulnerability response* by consolidating further activity; requirements and recommendations in this standard are then applied to these consolidated groupings of *vulnerabilities* instead of each individual detected instance.

#### FRR-VDR-06

*Applies to:* Low, Moderate, High

Providers SHOULD evaluate *detected vulnerabilities*, considering the context of the *cloud service offering*, to determine if they are *false positive vulnerabilities*.

#### FRR-VDR-07

*Applies to:* Low, Moderate, High

Providers MUST evaluate *detected vulnerabilities*, considering the context of the *cloud service offering*, to determine if they are *likely exploitable vulnerabilities*.

#### FRR-VDR-08

*Applies to:* Low, Moderate, High

Providers MUST evaluate detected vulnerabilities, considering the context of the *cloud service offering*, to determine if they are *internet-reachable vulnerabilities*.

#### FRR-VDR-09

Applies to: Low, Moderate, High

Providers MUST evaluate detected vulnerabilities, considering the context of the *cloud service offering*, to estimate the *potential adverse impact* of exploitation on government customers AND assign one of the following *potential adverse impact* ratings:

- **N1:** Exploitation could be expected to have *negligible adverse effects* on one or more agencies that use the *cloud service offering*.
- **N2:** Exploitation could be expected to have *limited adverse effects* on one or more agencies that use the *cloud service offering*.
- **N3:** Exploitation could be expected to have a *serious adverse effect* on one agency that uses the *cloud service offering*.
- **N4:** Exploitation could be expected to have a *catastrophic adverse effect* on one agency that uses the *cloud service offering* OR a *serious adverse effect* on more than one federal agency that uses the *cloud service offering*.
- **N5:** Exploitation could be expected to have a *catastrophic adverse effect* on more than one agency that uses the *cloud service offering*.

#### FRR-VDR-10

Applies to: Low, Moderate, High

Providers SHOULD consider at least the following factors when considering the context of the *cloud service offering* to evaluate detected vulnerabilities:

1. **Criticality:** How important are the systems or information that might be impacted by the *vulnerability*?
2. **Reachability:** How might a threat actor reach the *vulnerability* and how *likely* is that?
3. **Exploitability:** How easy is it for a threat actor to exploit the *vulnerability* and how *likely* is that?
4. **Detectability:** How easy is it for a threat actor to become aware of the *vulnerability* and how *likely* is that?
5. **Prevalence:** How much of the *cloud service offering* is affected by the *vulnerability*?
6. **Privilege:** How much privileged authority or access is granted or can be gained from exploiting the *vulnerability*?
7. **Proximate Vulnerabilities:** How does this *vulnerability* interact with previously detected vulnerabilities, especially *partially or fully mitigated vulnerabilities*?
8. **Known Threats:** How might already known threats leverage the *vulnerability* and how *likely* is that?

#### FRR-VDR-11

Applies to: Low, Moderate, High

Providers MUST document the reason and resulting implications for their customers when choosing not to meet FedRAMP recommendations in this standard; this documentation MUST be included in the *authorization data* for the *cloud service offering*.

#### FRR-VDR-AY

This section provides guidance on the application of this standard, including recommendations for implementing high quality *vulnerability detection* and *response* programs; providers who follow some or all of these will be better positioned to meet future FedRAMP authorization requirements.

## FRR-VDR-AY-01

*Applies to:* Low, Moderate, High

If it is not possible to *fully mitigate or remediate detected vulnerabilities*, providers SHOULD instead *partially mitigate vulnerabilities promptly, progressively, and persistently*.

## FRR-VDR-AY-02

*Applies to:* Low, Moderate, High

Providers SHOULD make design and architecture decisions for their *cloud service offering* that mitigate the risk of *vulnerabilities* by default AND decrease the risk and complexity of *vulnerability detection and response*.

## FRR-VDR-AY-03

*Applies to:* Low, Moderate, High

Providers SHOULD use automated services to improve and streamline *vulnerability detection and response*.

## FRR-VDR-AY-04

*Applies to:* Low, Moderate, High

Providers SHOULD automatically perform *vulnerability detection* on representative samples of new or *significantly changed information resources*.

## FRR-VDR-AY-05

*Applies to:* Low, Moderate, High

Providers SHOULD NOT weaken the security of *information resources* to facilitate vulnerability scanning or assessment activities.

## FRR-VDR-AY-06

*Applies to:* Low, Moderate, High

Providers SHOULD NOT deploy or otherwise activate new machine-based *information resources* with *Known Exploited Vulnerabilities*.

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## FRR-VDR-RP

This section identifies FedRAMP-specific reporting requirements and recommendations for *vulnerabilities*.

## FRR-VDR-RP-01

*Applies to:* Low, Moderate, High

Providers MUST report *vulnerability detection and response* activity to all necessary parties *persistently*, summarizing ALL activity since the previous report; these reports are *authorization data* and are subject to the FedRAMP Authorization Data Sharing (ADS) standard.

## FRR-VDR-RP-02

Applies to: Low, Moderate, High

Providers SHOULD include high-level overviews of ALL *vulnerability detection* and *response* activities conducted during this period for the *cloud service offering*; this includes vulnerability disclosure programs, bug bounty programs, penetration testing, assessments, etc.

## FRR-VDR-RP-03

Applies to: Low, Moderate, High

Providers MUST NOT irresponsibly disclose specific sensitive information about *vulnerabilities* that would *likely* lead to exploitation, but MUST disclose sufficient information for informed risk-based decision-making to all necessary parties.

Note: See *FRR-VDR-EX* for exceptions to this requirement.

## FRR-VDR-RP-04

Applies to: Low, Moderate, High

Providers MAY responsibly disclose *vulnerabilities* publicly or with other parties if the provider determines doing so will NOT *likely* lead to exploitation.

## FRR-VDR-RP-05

Applies to: Low, Moderate, High

Providers MUST include the following information (if applicable) on *detected vulnerabilities* when reporting on *vulnerability detection* and *response* activity, UNLESS it is an *accepted vulnerability*:

1. Provider's internally assigned tracking identifier
2. Time and source of the detection
3. Time of completed evaluation
4. Is it an *internet-reachable vulnerability* or not?
5. Is it a *likely exploitable vulnerability* or not?
6. Historically and currently estimated *potential adverse impact* of exploitation
7. Time and level of each completed and evaluated reduction in *potential adverse impact*
8. Estimated time and target level of next reduction in *potential adverse impact*
9. Is it currently or is it likely to become an *overdue vulnerability* or not? If so, explain.
10. Any supplementary information the provider responsibly determines will help federal agencies assess or mitigate the risk to their *federal customer data* within the *cloud service offering* resulting from the *vulnerability*
11. Final disposition of the *vulnerability*

## FRR-VDR-RP-06

Applies to: Low, Moderate, High

Providers MUST include the following information on *accepted vulnerabilities* when reporting on *vulnerability detection* and *response* activity:

1. Provider's internally assigned tracking identifier
2. Time and source of the detection
3. Time of completed evaluation
4. Is it an *internet-reachable vulnerability* or not?

5. Is it a *likely exploitable vulnerability* or not?
  6. Currently estimated *potential adverse impact* of exploitation
  7. Explanation of why this is an *accepted vulnerability*
  8. Any supplementary information the provider determines will responsibly help federal agencies assess or mitigate the risk to their *federal customer data* within the *cloud service offering* resulting from the *accepted vulnerability*
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## FRR-VDR-EX

These exceptions MAY override some or all of the FedRAMP requirements and recommendations in this standard.

### FRR-VDR-EX-01

Applies to: Low, Moderate, High

Providers MAY be required to share additional *vulnerability* information, alternative reports, or to report at an alternative frequency as a condition of a FedRAMP Corrective Action Plan or other agreements with federal agencies.

### FRR-VDR-EX-02

Applies to: Low, Moderate, High

Providers MAY be required to provide additional information or details about *vulnerabilities*, including sensitive information that would *likely* lead to exploitation, as part of review, response or investigation by necessary parties.

### FRR-VDR-EX-03

Applies to: Low, Moderate, High

Providers MUST NOT use this standard to reject requests for additional information from necessary parties which also include law enforcement, Congress, and Inspectors General.

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## FRR-VDR-TF

This section provides guidance on timeframes that apply to all impact levels of FedRAMP authorization for activities required or recommended in this standard; these timeframes are thresholds that secure providers should consistently strive to exceed by significant margins.

### FRR-VDR-TF-01

Applies to: Low, Moderate, High

Providers MUST report *vulnerability detection and response* activity to all necessary parties in a consistent format that is human readable at least monthly.

### FRR-VDR-TF-02

Applies to: Low, Moderate, High

Providers SHOULD remediate *Known Exploited Vulnerabilities* according to the due dates in the CISA Known Exploited Vulnerabilities Catalog (even if the vulnerability has been *fully mitigated*) as required by CISA Binding Operational Directive (BOD) 22-01 or any successor guidance from CISA.

## FRR-VDR-TF-03

*Applies to:* Low, Moderate, High

Providers MUST categorize any vulnerability that is not or will not be *fully mitigated* or *remediated* within 192 days of evaluation as an *accepted vulnerability*.

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## FRR-VDR-TF-HI

This section provides guidance on timeframes that apply specifically to FedRAMP High authorizations for activities required or recommended in this standard; these timeframes are thresholds that secure providers should consistently strive to exceed by significant margins.

### FRR-VDR-TF-HI-01

*Applies to:* High

Providers SHOULD make all recent historical *vulnerability detection* and *response* activity available in a *machine-readable* format for automated retrieval by all necessary parties (e.g. using an API service or similar); this information SHOULD be updated *persistently*, at least once every 7 days.

### FRR-VDR-TF-HI-02

*Applies to:* High

Providers SHOULD *persistently* perform *vulnerability detection* on representative samples of similar machine-based *information resources*, at least once per day.

### FRR-VDR-TF-HI-03

*Applies to:* High

Providers SHOULD *persistently* perform *vulnerability detection* on all *information resources* that are *likely to drift*, at least once every 7 days.

### FRR-VDR-TF-HI-04

*Applies to:* High

Providers SHOULD *persistently* perform *vulnerability detection* on all *information resources* that are NOT *likely to drift*, at least once every month.

### FRR-VDR-TF-HI-05

*Applies to:* High

Providers SHOULD evaluate ALL *vulnerabilities* as required by FRR-VDR-07, FRR-VDR-08, and FRR-VDR-09 within 2 days of *detection*.

### FRR-VDR-TF-HI-06

*Applies to:* High

Providers SHOULD treat *internet-reachable likely exploitable vulnerabilities* with a *potential adverse impact* of N4 or N5 as a security incident until they are *partially mitigated* to N3 or below.

## FRR-VDR-TF-HI-07

Applies to: High

Providers SHOULD treat *likely exploitable vulnerabilities* that are NOT *internet-reachable* with a *potential adverse impact* of N5 as a security incident until they are partially mitigated to N4 or below.

## FRR-VDR-TF-HI-08

Applies to: High

Providers SHOULD *partially mitigate vulnerabilities* to a lower *potential adverse impact* within the maximum time-frames from evaluation shown below, factoring for the current *potential adverse impact*, *internet reachability*, and *likely exploitability*:

Potential Adverse Impact	LEV + IRV	LEV + NIRV	NLEV
N5	.5	1	8
N4	2	8	32
N3	8	16	64
N2	24	96	192

## FRR-VDR-TF-HI-09

Applies to: High

Providers SHOULD *mitigate or remediate* remaining *vulnerabilities* during routine operations as determined necessary by the provider.

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## FRR-VDR-AG

The section provides guidance for agencies that apply under 44 USC § 3613 (e) which states that the assessment and materials within a FedRAMP authorization package "shall be presumed adequate for use in an agency authorization to operate cloud computing products and services."

### FRR-VDR-AG-01

Applies to: Low, Moderate, High

Agencies SHOULD review the information provided in vulnerability reports at appropriate and reasonable intervals commensurate with the expectations and risk posture indicated by their Authorization to Operate, and SHOULD use automated processing and filtering of machine readable information from cloud service providers.

*Note: FedRAMP recommends that agencies only review \_overdue and accepted vulnerabilities with a potential adverse impact of N3 or higher unless the cloud service provider recommends mitigations or the service is included in a higher risk federal information system. Furthermore, accepted vulnerabilities generally only need to be reviewed when they are added or during an updated risk assessment due to changes in the agency's use or authorization.\_*

### FRR-VDR-AG-02

Applies to: Low, Moderate, High

Agencies SHOULD use *vulnerability* information reported by the Provider to maintain Plans of Action & Milestones for agency security programs when relevant according to agency security policies (such as if the agency takes action to mitigate the risk of exploitation or authorized the continued use of a cloud service with *accepted vulnerabilities* that put agency information systems at risk).

#### FRR-VDR-AG-03

Applies to: Low, Moderate, High

Agencies SHOULD NOT request additional information from cloud service providers that is not required by this FedRAMP standard UNLESS the head of the agency or an authorized delegate makes a determination that there is a demonstrable need for such.

*Note: This is related to the Presumption of Adequacy directed by 44 USC § 3613 (e).*

#### FRR-VDR-AG-04

Applies to: Low, Moderate, High

Agencies MUST inform FedRAMP after requesting any additional *vulnerability* information or materials from a cloud service provider beyond those required by this policy by sending a notification to [info@fedramp.gov](mailto:info@fedramp.gov).

*Note: This is an OMB policy; agencies are required to notify FedRAMP in OMB Memorandum M-24-15 section IV (a).*

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### FRR-RSC

**These requirements and recommendations apply ALWAYS to ALL FedRAMP Authorized cloud services based on the current Effective Date(s) and Overall Applicability of this standard.**

#### FRR-RSC-01

Applies to: Low, Moderate, High

Providers MUST create and maintain guidance that includes instructions on how to securely access, configure, operate, and decommission *top-level administrative accounts* that control enterprise access to the entire *cloud service offering*.

*Note: This guidance should explain how \_top-level administrative accounts are named and referred to in the cloud service offering.\_*

#### FRR-RSC-02

Applies to: Low, Moderate, High

Providers MUST create and maintain guidance that explains security-related settings that can be operated only by *top-level administrative accounts* and their security implications.

#### FRR-RSC-03

Applies to: Low, Moderate, High

Providers SHOULD create and maintain guidance that explains security-related settings that can be operated only by *privileged accounts* and their security implications.

## FRR-RSC-04

*Applies to:* Low, Moderate, High

Providers SHOULD set all settings to their recommended secure defaults for *top-level administrative accounts* and *privileged accounts* when initially provisioned.

## FRR-RSC-05

*Applies to:* Low, Moderate, High

Providers SHOULD offer the capability to compare all current settings for *top-level administrative accounts* and *privileged accounts* to the recommended secure defaults.

## FRR-RSC-06

*Applies to:* Low, Moderate, High

Providers SHOULD offer the capability to export all security settings in a *machine-readable* format.

## FRR-RSC-07

*Applies to:* Low, Moderate, High

Providers SHOULD offer the capability to view and adjust security settings via an API or similar capability.

## FRR-RSC-08

*Applies to:* Low, Moderate, High

Providers SHOULD provide recommended secure configuration guidance in a *machine-readable* format that can be used by customers or third-party tools to compare against current settings.

## FRR-RSC-09

*Applies to:* Low, Moderate, High

Providers SHOULD make recommended secure configuration guidance available publicly.

## FRR-RSC-10

*Applies to:* Low, Moderate, High

Providers SHOULD provide versioning and a release history for recommended secure default settings for *top-level administrative accounts* and *privileged accounts* as they are adjusted over time.

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## FRR-UCM

**These requirements and recommendations apply ALWAYS to ALL FedRAMP Authorized cloud services based on the current Effective Date(s) and Overall Applicability of this standard.**

## FRR-UCM-01

*Applies to:* Low, Moderate, High

Providers MUST document the cryptographic modules used in each service (or groups of services that use the same modules) where cryptographic services are used to protect *federal customer data*, including whether these modules are validated under the NIST Cryptographic Module Validation Program or are update streams of such modules.

#### FRR-UCM-02

*Applies to:* Low, Moderate, High

Providers SHOULD configure *agency* tenants by default to use cryptographic services that use cryptographic modules or update streams of cryptographic modules with active validations under the NIST Cryptographic Module Validation Program when such modules are available.

#### FRR-UCM-04

*Applies to:* High

Providers MUST use cryptographic modules or update streams of cryptographic modules with active validations under the NIST Cryptographic Module Validation Program when using cryptographic services to protect *federal customer data*.

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#### FRR-CCM

**These requirements and recommendations apply ALWAYS to ALL FedRAMP Authorized cloud services based on the current Effective Date(s) and Overall Applicability of this standard.**

#### FRR-CCM-01

*Applies to:* Low, Moderate, High

Providers MUST make an *Ongoing Authorization Report* available to *all necessary parties* every 3 months, in a consistent format that is human readable, covering the entire period since the previous summary; this report MUST include high-level summaries of at least the following information:

1. Changes to *authorization data*
2. Planned changes to *authorization data* during at least the next 3 months
3. *\_Accepted* vulnerabilities
4. *Transformative* changes
5. Updated recommendations or best practices for security, configuration, usage, or similar aspects of the *cloud service offering*

#### FRR-CCM-02

*Applies to:* Low, Moderate, High

Providers SHOULD establish a regular 3 month cycle for *Ongoing Authorization Reports* that is spread out from the beginning, middle, or end of each quarter.

*Note: This recommendation is intended to discourage hundreds of cloud service providers from releasing their \_Ongoing Authorization Reports during the first or last week of each quarter because that is the easiest way for a single provider to track this deliverable; the result would overwhelm agencies with many cloud services. Widely used cloud service providers are encouraged to work with their customers to identify ideal timeframes for this cycle.\_*

#### FRR-CCM-03

*Applies to:* Low, Moderate, High

Providers MUST publicly include the target date for their next *Ongoing Authorization Report* with the *authorization data* required by FRR-ADS-01.

#### FRR-CCM-04

*Applies to:* Low, Moderate, High

Providers MUST establish and share an asynchronous mechanism for *all necessary parties* to provide feedback or ask questions about each *Ongoing Authorization Report*.

#### FRR-CCM-05

*Applies to:* Low, Moderate, High

Providers MUST maintain an anonymized and desensitized summary of the feedback, questions, and answers about each *Ongoing Authorization Report* as an addendum to the *Ongoing Authorization Report*.

*Note: This is intended to encourage sharing of information and decrease the burden on the cloud service provider - providing this summary will reduce duplicate questions from agencies and ensure FedRAMP has access to this information. It is generally in the provider's interest to update this addendum frequently throughout the quarter.*

#### FRR-CCM-06

*Applies to:* Low, Moderate, High

Providers MUST NOT irresponsibly disclose sensitive information in an *Ongoing Authorization Report* that would *likely* have an adverse effect on the *cloud service offering*.

#### FRR-CCM-07

*Applies to:* Low, Moderate, High

Providers MAY responsibly share some or all of the information an *Ongoing Authorization Report* publicly or with other parties if the provider determines doing so will NOT *likely* have an adverse effect on the *cloud service offering*.

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### FRR-CCM-QR

**These requirements and recommendations apply to providers hosting synchronous *Quarterly Reviews* with all agencies.**

#### FRR-CCM-QR-02

*Applies to:* Moderate, High

Providers MUST host a synchronous *Quarterly Review* every 3 months, open to *all necessary parties*, to review aspects of the most recent *Ongoing Authorization Reports* that the provider determines are of the most relevance to *agencies*.

#### FRR-CCM-QR-03

*Applies to:* Low, Moderate, High

Providers SHOULD regularly schedule *Quarterly Reviews* to occur at least 3 business days after releasing an *Ongoing Authorization Report* AND within 10 business days of such release.

#### **FRR-CCM-QR-04**

*Applies to:* Low, Moderate, High

Providers MUST NOT irresponsibly disclose sensitive information in a *Quarterly Review* that would *likely* have an adverse effect on the *cloud service offering*.

#### **FRR-CCM-QR-05**

*Applies to:* Low, Moderate, High

Providers MUST include either a registration link or a downloadable calendar file with meeting information for *Quarterly Reviews* in the *authorization data* available to all *necessary parties* required by FRR-ADS-06 and FRR-ADS-07.

#### **FRR-CCM-QR-06**

*Applies to:* Low, Moderate, High

Providers MUST publicly include the target date for their next *Quarterly Review* with the *authorization data* required by FRR-ADS-01.

#### **FRR-CCM-QR-07**

*Applies to:* Low, Moderate, High

Providers SHOULD include additional information in *Quarterly Reviews* that the provider determines are of interest, use, or otherwise relevant to *agencies*.

#### **FRR-CCM-QR-08**

*Applies to:* Low, Moderate, High

Providers MUST NOT invite third parties to attend *Quarterly Reviews* intended for *agencies* unless it is of specific relevance.

*Note:* This is because *agencies* are less likely to actively participate in meetings with third parties; the cloud service provider's independent assessor should be considered relevant by default.

#### **FRR-CCM-QR-09**

*Applies to:* Low, Moderate, High

Providers SHOULD record or transcribe *Quarterly Reviews* and make such available to *all necessary parties* with other *authorization data* required by FRR-ADS-06 and FRR-ADS07.

#### **FRR-CCM-QR-10**

*Applies to:* Low, Moderate, High

Providers MAY responsibly share recordings or transcriptions of *Quarterly Reviews* with the public or other parties ONLY if the provider removes all *agency* information (comments, questions, names, etc.) AND determines sharing will NOT *likely* have an adverse effect on the *cloud service offering*.

#### **FRR-CCM-QR-11**

*Applies to:* Low, Moderate, High

Providers MAY responsibly share content prepared for a *Quarterly Review* with the public or other parties if the provider determines doing so will NOT *likely* have an adverse effect on the *cloud service offering*.

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## FRR-CCM-AG

**This section includes requirements and recommendations for agencies who are using FedRAMP Authorized cloud services based on statute and policy directives from OMB that apply to agencies.**

### FRR-CCM-AG-01

*Applies to:* Low, Moderate, High

Agencies MUST review each *Ongoing Authorization Report* to understand how changes to the *cloud service offering* may impact the previously agreed-upon risk tolerance documented in the agency's Authorization to Operate of a federal information system that includes the *cloud service offering* in its boundary.

*Note: This is required by 44 USC § 35, OMB A-130, FIPS-200, and M-24-15.*

### FRR-CCM-AG-02

*Applies to:* Low, Moderate, High

Agencies SHOULD consider the Security Category noted in their Authorization to Operate of the federal information system that includes the *cloud service offering* in its boundary and assign appropriate information security resources for reviewing *Ongoing Authorization Reports*, attending *Quarterly Reviews*, and other ongoing *authorization data*.

### FRR-CCM-AG-03

*Applies to:* High

Agencies SHOULD designate a senior information security official to review *Ongoing Authorization Reports* and represent the agency at *Quarterly Reviews* for *cloud service offerings* included in agency information systems with a Security Category of High.

### FRR-CCM-AG-04

*Applies to:* Low, Moderate, High

Agencies SHOULD formally notify the provider if the information presented in an *Ongoing Authorization Report*, *Quarterly Review*, or other ongoing *authorization data* causes significant concerns that may lead the agency to remove the *cloud service offering* from operation.

### FRR-CCM-AG-05

*Applies to:* Low, Moderate, High

Agencies MUST notify FedRAMP by sending a notification to [info@fedramp.gov](mailto:info@fedramp.gov) if the information presented in an *Ongoing Authorization Report*, *Quarterly Review*, or other ongoing *authorization data* causes significant concerns that may lead the agency to stop operation of the *cloud service offering*.

*Note: Agencies are required to notify FedRAMP by OMB Memorandum M-24-15 section IV (a).*

### FRR-CCM-AG-06

*Applies to:* Low, Moderate, High

Agencies MUST NOT place additional security requirements on cloud service providers beyond those required by FedRAMP UNLESS the head of the agency or an authorized delegate makes a determination that there is a demonstrable need for such; this does not apply to seeking clarification or asking general questions about *authorization data*.

*Note: This is a statutory requirement in 44 USC § 3613 (e) related to the Presumption of Adequacy for a FedRAMP authorization.*

#### FRR-CCM-AG-07

*Applies to:* Low, Moderate, High

Agencies MUST inform FedRAMP after requesting any additional information or materials from a cloud service provider beyond those required in this policy by sending a notification to info@fedramp.gov.

*Note: Agencies are required to notify FedRAMP by OMB Memorandum M-24-15 section IV (a).*

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## Key Security Indicators

### KSI-AFR: Authorization by FedRAMP

A secure cloud service provider seeking FedRAMP authorization will address all FedRAMP 20x requirements and recommendations, including government-specific requirements for maintaining a secure system and reporting on activities to government customers.

#### KSI-AFR-01

*Applies to:* Low, Moderate

Apply the FedRAMP Minimum Assessment Standard (MAS) to identify and document the scope of the cloud service offering to be assessed for FedRAMP authorization and persistently address all related requirements and recommendations..

#### KSI-AFR-02

*Applies to:* Low, Moderate

Set security goals for the cloud service offering based on FedRAMP 20x Phase Two Key Security Indicators (KSIs - you are here), develop automated validation of status and progress to the greatest extent possible, and persistently address all related requirements and recommendations..

#### KSI-AFR-03

*Applies to:* Low, Moderate

Determine how authorization data will be shared with all necessary parties in alignment with the FedRAMP Authorization Data Sharing (ADS) standard and persistently address all related requirements and recommendations..

#### KSI-AFR-04

*Applies to:* Low, Moderate

Document the vulnerability detection and vulnerability response methodology used within the cloud service offering in alignment with the FedRAMP Vulnerability Detection and Response (VDR) standard and persistently address all related

requirements and recommendations..

#### KSI-AFR-05

*Applies to:* Low, Moderate

Determine how significant changes will be tracked and how all necessary parties will be notified in alignment with the FedRAMP Significant Change Notification (SCN) standard and persistently address all related requirements and recommendations..

#### KSI-AFR-06

*Applies to:* Low, Moderate

Maintain a plan and process for providing Ongoing Authorization Reports and Quarterly Reviews for all necessary parties in alignment with the FedRAMP Collaborative Continuous Monitoring (CCM) standard and persistently address all related requirements and recommendations..

#### KSI-AFR-07

*Applies to:* Low, Moderate

Develop secure by default configurations and provide guidance for secure configuration of the cloud service offering to customers in alignment with the FedRAMP Recommended Secure Configuration (RSC) standard and persistently address all related requirements and recommendations..

#### KSI-AFR-08

*Applies to:* Low, Moderate

Operate a secure inbox to receive critical communication from FedRAMP and other government entities in alignment with FedRAMP Security Inbox Requirements (SIR) and persistently address all related requirements and recommendations..

#### KSI-AFR-09

*Applies to:* Low, Moderate

Persistently validate, assess, and report on the effectiveness and status of security decisions and policies that are implemented within the cloud service offering in alignment with the FedRAMP 20x Persistent Validation and Assessment (PVA) standard, and persistently address all related requirements and recommendations..

#### KSI-AFR-10

*Applies to:* Low, Moderate

Integrate FedRAMP's Incident Communications Procedures (ICP) into incident response procedures and persistently address all related requirements and recommendations..

#### KSI-AFR-11

*Applies to:* Low, Moderate

Ensure that cryptographic modules used to protect potentially sensitive federal customer data are selected and used in alignment with the FedRAMP 20x Use of Cryptographic Modules policy and persistently address all related requirements and recommendations..

## **KSI-CED: Cybersecurity Education**

**A secure cloud service provider will continuously educate their employees on cybersecurity measures, testing them regularly to ensure their knowledge is satisfactory.**

### **KSI-CED-01**

*Applies to:* Low, Moderate

Require and monitor the effectiveness of training given to all employees on policies, procedures, and security-related topics..

### **KSI-CED-02**

*Applies to:* Low, Moderate

Require and monitor the effectiveness of role-specific training for high risk roles, including at least roles with privileged access..

### **KSI-CED-03**

*Applies to:* Low, Moderate

Require and monitor the effectiveness of role-specific training provided to development and engineering staff that covers best practices for delivering secure software..

### **KSI-CED-04**

*Applies to:* Low, Moderate

Require and monitor the effectiveness of role-specific training to staff involved with incident response or disaster recovery..

## **KSI-CMT: Change Management**

**A secure cloud service provider will ensure that all system changes are properly documented and configuration baselines are updated accordingly.**

### **KSI-CMT-01**

*Applies to:* Low, Moderate

Log and monitor modifications to the cloud service offering..

### **KSI-CMT-02**

*Applies to:* Low, Moderate

Execute changes through redeployment of version controlled immutable resources rather than direct modification wherever possible.

### **KSI-CMT-03**

*Applies to:* Low, Moderate

Automate persistent testing and validation of changes throughout deployment..

#### **KSI-CMT-04**

*Applies to:* Low, Moderate

- | Always follow a documented change management procedure..

#### **KSI-CMT-05**

*Applies to:* Low, Moderate

- | Superseded by KSI-AFR-05 (SCN).

### **KSI-CNA: Cloud Native Architecture**

A secure *cloud service offering* will use cloud native architecture and design principles to enforce and enhance the Confidentiality, Integrity and Availability of the system.

#### **KSI-CNA-01**

*Applies to:* Low, Moderate

- | Configure all machine-based information resources to limit inbound and outbound network traffic..

#### **KSI-CNA-02**

*Applies to:* Low, Moderate

- | Design systems to minimize the attack surface and minimize lateral movement if compromised.

#### **KSI-CNA-03**

*Applies to:* Low, Moderate

- | Use logical networking and related capabilities to enforce traffic flow controls.

#### **KSI-CNA-04**

*Applies to:* Low, Moderate

- | Use immutable infrastructure with strictly defined functionality and privileges by default.

#### **KSI-CNA-05**

*Applies to:* Low, Moderate

- | Protect against denial of service attacks and other unwanted activity..

#### **KSI-CNA-06**

*Applies to:* Low, Moderate

- | Design systems for high availability and rapid recovery.

#### **KSI-CNA-07**

*Applies to:* Low, Moderate

Ensure cloud-native *information resources* are implemented based on host provider's best practices and documented guidance.

#### KSI-CNA-08

*Applies to:* Moderate

Use automated services to persistently assess the security posture of all machine-based information resources and automatically enforce their intended operational state..

### KSI-IAM: Identity and Access Management

A secure *cloud service offering* will protect user data, control access, and apply zero trust principles.

#### KSI-IAM-01

*Applies to:* Low, Moderate

Enforce multi-factor authentication (MFA) using methods that are difficult to intercept or impersonate (phishing-resistant MFA) for all user authentication.

#### KSI-IAM-02

*Applies to:* Low, Moderate

Use secure passwordless methods for user authentication and authorization when feasible, otherwise enforce strong passwords with MFA.

#### KSI-IAM-03

*Applies to:* Low, Moderate

Enforce appropriately secure authentication methods for non-user accounts and services.

#### KSI-IAM-04

*Applies to:* Low, Moderate

Use a least-privileged, role and attribute-based, and just-in-time security authorization model for all user and non-user accounts and services.

#### KSI-IAM-05

*Applies to:* Low, Moderate

Configure identity and access management with measures that always verify each user or device can only access the resources they need..

#### KSI-IAM-06

*Applies to:* Low, Moderate

Automatically disable or otherwise secure accounts with privileged access in response to suspicious activity.

## KSI-IAM-07

Applies to: Low, Moderate

- | Securely manage the lifecycle and privileges of all accounts, roles, and groups, using automation..

## KSI-INR: Incident Response

A secure *cloud service offering* will document, report, and analyze security incidents to ensure regulatory compliance and continuous security improvement.

### KSI-INR-01

Applies to: Low, Moderate

- | Always follow a documented incident response procedure..

### KSI-INR-02

Applies to: Low, Moderate

- | Maintain a log of incidents and periodically review past incidents for patterns or vulnerabilities.

### KSI-INR-03

Applies to: Low, Moderate

- | Generate after action reports and *regularly* incorporate lessons learned into operations.

## KSI-MLA: Monitoring, Logging, and Auditing

A secure *cloud service offering* will monitor, log, and audit all important events, activity, and changes.

### KSI-MLA-01

Applies to: Low, Moderate

- | Operate a Security Information and Event Management (SIEM) or similar system(s) for centralized, tamper-resistant logging of events, activities, and changes.

### KSI-MLA-02

Applies to: Low, Moderate

- | *Regularly* review and audit logs.

### KSI-MLA-03

Applies to: Low, Moderate

- | Superseded by KSI-AFR-04 (VDR).

### KSI-MLA-04

Applies to: Low, Moderate

Superseded by KSI-AFR-04 (VDR).

#### KSI-MLA-05

*Applies to:* Low, Moderate

Perform Infrastructure as Code and configuration evaluation and testing.

#### KSI-MLA-06

*Applies to:* Low, Moderate

Superseded by KSI-AFR-04 (VDR).

#### KSI-MLA-07

*Applies to:* Low, Moderate

Maintain a list of information resources and event types that will be monitored, logged, and audited, then do so..

#### KSI-MLA-08

*Applies to:* Moderate

Use a least-privileged, role and attribute-based, and just-in-time access authorization model for access to log data based on organizationally defined data sensitivity..

### KSI-PIY: Policy and Inventory

A secure *cloud service offering* will have intentional, organized, universal guidance for how every *information resource*, including personnel, is secured.

#### KSI-PIY-01

*Applies to:* Low, Moderate

Use authoritative sources to automatically maintain real-time inventories of all information resources.

#### KSI-PIY-02

*Applies to:* Low, Moderate

Document the security objectives and requirements for each information resource or set of information resources..

#### KSI-PIY-03

*Applies to:* Low, Moderate

Maintain a vulnerability disclosure program.

#### KSI-PIY-04

*Applies to:* Low, Moderate

Monitor the effectiveness of building security and privacy considerations into the Software Development Lifecycle and aligning with CISA Secure By Design principles..

## **KSI-PIY-05**

*Applies to:* Low, Moderate

- | Document methods used to evaluate *information resource* implementations.

## **KSI-PIY-06**

*Applies to:* Low, Moderate

- | Monitor the effectiveness of the organization's investments in achieving security objectives..

## **KSI-PIY-07**

*Applies to:* Low, Moderate

- | Document risk management decisions for software supply chain security.

## **KSI-PIY-08**

*Applies to:* Low, Moderate

- | Regularly measure executive support for achieving the organization's security objectives..

## **KSI-RPL: Recovery Planning**

A secure *cloud service offering* will define, maintain, and test incident response plan(s) and recovery capabilities to ensure minimal service disruption and data loss during incidents and contingencies.

### **KSI-RPL-01**

*Applies to:* Low, Moderate

- | Define Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO).

### **KSI-RPL-02**

*Applies to:* Low, Moderate

- | Develop and maintain a recovery plan that aligns with the defined recovery objectives.

### **KSI-RPL-03**

*Applies to:* Low, Moderate

- | Perform system backups aligned with recovery objectives.

### **KSI-RPL-04**

*Applies to:* Low, Moderate

- | Regularly test the capability to recover from incidents and contingencies.

## KSI-SVC: Service Configuration

A secure *cloud service offering* will follow FedRAMP encryption policies, continuously verify *information resource integrity*, and restrict access to *third-party information resources*.

### KSI-SVC-01

*Applies to:* Low, Moderate

Implement improvements based on persistent evaluation of information resources for opportunities to improve security..

### KSI-SVC-02

*Applies to:* Low, Moderate

Encrypt or otherwise secure network traffic.

### KSI-SVC-03

*Applies to:* Low, Moderate

Superseded by KSI-AFR-11 (UCM).

### KSI-SVC-04

*Applies to:* Low, Moderate

Manage configuration of machine-based information resources using automation..

### KSI-SVC-05

*Applies to:* Low, Moderate

Use cryptographic methods to validate the integrity of machine-based information resources..

### KSI-SVC-06

*Applies to:* Low, Moderate

Automate management, protection, and regular rotation of digital keys, certificates, and other secrets..

### KSI-SVC-07

*Applies to:* Low, Moderate

Use a consistent, risk-informed approach for applying security patches.

### KSI-SVC-08

*Applies to:* Moderate

Do not introduce or leave behind residual elements that could negatively affect confidentiality, integrity, or availability of federal customer data during operations..

## KSI-SVC-09

*Applies to:* Moderate

Persistently validate the authenticity and integrity of communications between machine-based information resources using automation..

## KSI-SVC-10

*Applies to:* Moderate

Remove unwanted federal customer data promptly when requested by an agency in alignment with customer agreements, including from backups if appropriate; this typically applies when a customer spills information or when a customer seeks to remove information from a service due to a change in usage..

## KSI-TPR: Third-Party Information Resources

A secure *cloud service offering* will understand, monitor, and manage supply chain risks from *third-party information resources*.

### KSI-TPR-01

*Applies to:* Low, Moderate

Superseded by KSI-AFR-01 (MAS).

### KSI-TPR-02

*Applies to:* Low, Moderate

Superseded by KSI-AFR-01 (MAS).

### KSI-TPR-03

*Applies to:* Low, Moderate

Identify and prioritize mitigation of potential supply chain risks.

### KSI-TPR-04

*Applies to:* Low, Moderate

Monitor third party software information resources for upstream vulnerabilities, with contractual notification requirements or active monitoring services.

## Technical assistance

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### FRA-ADS

**Purpose:** This Technical Assistance helps stakeholders understand the intent behind the requirements in the FedRAMP *authorization data Sharing Standard*.

**Disclaimer:** Every cloud service provider is different, every architecture is different, and every environment is different. Best practices and technical assistance MUST NOT be used as a checklist. All examples are for discussion purposes ONLY.

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## FRA-ADS-04

"Without interruption" means that parties should not have to request manual approval each time they need to access *authorization data* or go through a complicated process. The preferred way of ensuring access without interruption is to use on-demand just-in-time access provisioning.

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## FRA-ADS-05

This is not a license to exclude accurate risk information, but specifics that would *likely* lead to compromise should be abstracted. A breach of confidentiality with *authorization data* should be anticipated by a secure cloud service provider.

### Examples of unnecessary sensitive information in *authorization data*

Key Tests:

- Passwords, API keys, access credentials, etc.
- Excessive detail about methodology that exposes weaknesses
- Personally identifiable information about employees

Examples:

- DON'T: "In an emergency, an administrator with physical access to a system can log in using "secretadmin" with the password "pleasewutno"" DO: "In an emergency, administrators with physical access can log in directly."
  - DON'T: "All backup MFA credentials are stored in a SuperSafe Series 9000 safe in the CEOs office." DO: "All backup MFA credentials are stored in a UL Class 350 safe in a secure location with limited access."
  - DON'T: "During an incident, the incident response team lead by Jim Smith (555-0505) will open a channel at the conference line (555-0101 #97808 passcode 99731)..." DO: "During an incident, the incident response team will coordinate over secure channels."
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## FRA-SCN

**Purpose:** This Technical Assistance helps stakeholders evaluate and label *significant changes* by type as required by *FRR-SCN-03*. This assistance is designed for the 20x Phase One Pilot and Rev5 Closed Beta Balance Improvement Test. The Significant Change Notification Requirements will be tested, evaluated, and improved in partnership with stakeholders based on real-world experience.

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## FRA-SCN-03

Once a change has been identified as a *significant change* in general, FedRAMP recommends next determining if a change is of the type *routine recurring*. If it is not, work down from the highest impact to lowest to identify the type of change.

1. Is it a *significant change*?
  2. If it is, is it a *routine recurring* change?
  3. If it is not, is it an *impact categorization* change?
  4. If it is not, is it a *transformative* change?
  5. If it is not, then it is an *adaptive* change.
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## FRA-SCN-RR

Activities that match the *routine recurring significant change* type are performed *regularly* and routinely by cloud service providers to address flaws or vulnerabilities, address incidents, and generally perform the typical maintenance and service delivery changes expected during day-to-day operations.

These changes leverage mature processes and capabilities to identify, mitigate, and remediate risks as part of the change. They are often entirely automated and may occur without human intervention, even though they have an impact on security of the service.

If the activity does not occur *regularly* and routinely then it cannot be a *significant change* of this type (e.g., replacing all physical firewalls to remediate a vulnerability is obviously not regular or routine).

### Ongoing operations

Key Tests:

- Routine care and feeding by staff during normal duties
- No major impact to service availability
- Does not require executive approval

Examples:

- Provisioning or deprovisioning capacity to support service elasticity
- Changing or tuning performance configurations for instances or services
- Updating and maintaining operational handling of information flows and protection across physical and logical networks (e.g., updating firewall rules)
- Generating or refreshing API or access tokens

### Vulnerability Management

Key Tests:

- Minor, incremental patching or updates
- Significant refactoring or migration process NOT required
- No breaking changes

Examples:

- Updating security service or endpoint signatures
- Routine patching of devices, operating systems, software or libraries
- Updating and deploying code that applies normal fixes and improvements as part of a regular development cycle
- Vulnerability remediation activity that simply replaces a known-bad component(s) with a better version of the exact same thing, running in the exact same way with no changes to processes

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## FRA-SCN-TF

Activities that match the *transformative significant change* type are rare for a cloud service offering, adjusted for the size, scale, and complexity of the service. Small cloud service offerings may go years without *transformative* changes, while hyperscale providers may release multiple *transformative* changes per year.

### Transformative changes

Key Tests:

- Alters the service risk profile or require new or significantly different actions to address customer responsibilities
- Requires significant new design, development and testing with discrete associated project planning, budget, marketing, etc.
- Requires extensive updates to security assessments, documentation, and how a large number of security requirements are met and validated

Examples:

- The addition, removal, or replacement of a critical third party service that handles a significant portion of information (e.g., IaaS change)
  - Increasing the security categorization of a service within the offering that actively handles *federal customer data* (does NOT include impact change of entire offering - see impact categorization change)
  - Replacement of underlying management planes or paradigm shift in workload orchestration (e.g., bare-metal servers or virtual machines to containers, migration to kubernetes)
  - Datacenter migration where large amounts of *federal customer data* is moved across boundaries different from normal day-to-day operations
  - Adding a new AI-based capability that impacts *federal customer data* in a different way than existing services or capabilities (such as integrating a new third-party service or training on *federal customer data*)
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## FRA-SCN-AD

Activities that match the *adaptive significant change* type are a frequent and normal part of iteratively improving a service by deploying new functionality or modifying existing functionality in a way that is typically transparent to customers and does not introduce significant new security risks.

In general, most changes that do not happen *regularly* will be *adaptive* changes. This change type deliberately covers a wide range of activities in a way that requires assessment and consideration.

### Service adjustments

Key Tests:

- Requires minimal changes to security plans or procedures
- Requires some careful planning and project management to implement, but does not rise to the level of planning required for transformative changes
- Requires verification of existing functionality and secure configuration after implementation

Examples:

- Updates to operating systems, containers, virtual machines, software or libraries with known breaking changes, complex steps, or service disruption
  - Deploying larger than normal incremental feature improvements in code or libraries that are the work of multiple weeks of development efforts but are not considered a major new service
  - Changing cryptographic modules where the new module meets the same standards and characteristics of the former
  - Replacing a like-for-like component where some security plan or procedure adjustments are required (e.g., scanning tool or managed database swap)
  - Adding models to existing approved AI services without exposing *federal customer data* to new services
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## FRA-VDR

**Purpose:** This Technical Assistance provides additional context behind the intent and goals of certain aspects of this standard that have caused significant confusion or requests for clarification during public comment. This assistance is initially designed for 20x Phase Two/Three and the Rev5 Closed Beta Balance Improvement Test.

**Disclaimer:** Every cloud service provider is different, every architecture is different, and every environment is different. Best practices and technical assistance MUST NOT be used as a checklist. All examples are for discussion purposes ONLY.

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#### FRA-VDR-01

FedRAMP focuses on internet-reachable (rather than internet-accessible) to ensure that any service that might receive a payload from the internet is prioritized if that service has a vulnerability that can be triggered by processing the data in the payload. The simplest way to prevent exploitation of internet-reachable vulnerabilities is to intercept, inspect, filter, sanitize, reject, or otherwise deflect triggering payloads before they are processed by the vulnerable resource; once this prevention is in place the vulnerability should no longer be considered an internet-reachable vulnerability.

A classic example of an internet-reachable vulnerability on systems that are not typically internet-accessible is SQL injection ([https://en.wikipedia.org/wiki/SQL\\_injection](https://en.wikipedia.org/wiki/SQL_injection)), where an application stack behind a load balancer and firewall with no ability to route traffic to or from the internet can receive a payload indirectly from the internet that triggers the manipulation or compromise of data in a database that can only be accessed by an authorized connection from the application server on a private network.

Another simple example is the infamous Log4Shell (<https://en.wikipedia.org/wiki/Log4Shell>) vulnerability from 2021, where exploitation was possible via vulnerable internet-reachable resources deep in the application stack that were often not internet-accessible themselves.

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#### FRA-VDR-02

The simple reality is that most traditional vulnerabilities discovered by scanners or during assessment are not likely to be exploitable; exploitation typically requires an unrealistic set of circumstances that will not occur during normal operation. The likelihood of exploitation will vary depending on so many factors that FedRAMP will not recommend a specific framework for approaching this beyond the recommendations and requirements in this document.

The proof, ultimately, is in the pudding - providers who regularly evaluate vulnerabilities as not likely exploitable without careful consideration are more likely to suffer from an adverse impact where the root cause was an exploited vulnerability that was improperly evaluated. If done recklessly or deliberately, such actions will have a potential adverse impact on a provider's FedRAMP authorization.

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