



NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
10 Corporate Woods Drive, Albany, NY 12211-2395

NYSTRS CLOUD TECHNICAL CHECKLIST

VENDOR CONTACT INFORMATION

Vendor Name	Contact Person	Email	Phone Number
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Section Heading	Control Heading	Original ID	Question Text	Answer	Notes/Comments
Application & Interface Security	Application Security	AIS-01.2	Do you use an automated source code analysis tool to detect security defects in code prior to production?		
		AIS-01.5	(SaaS only) Do you review your applications for security vulnerabilities and address any issues prior to deployment to production?		
	Customer Access Requirements	AIS-02.1	Are all identified security, contractual, and regulatory requirements for customer access contractually addressed and remediated prior to granting customers access to data, assets, and information systems?		
	Data Integrity	AIS-03.1	Does your data management policies and procedures require audits to verify data input and output integrity routines?		
Audit Assurance & Compliance	Independent Audits	AAC-02.1	Do you allow tenants to view your SOC2/ISO 27001 or similar third-party audit or certification reports?		
		AAC-02.2	Do you conduct network penetration tests of your cloud service infrastructure at least annually?		
		AAC-02.3	Do you conduct application penetration tests of your cloud infrastructure regularly as prescribed by industry best practices and guidance?		
	Information System Regulatory Mapping	AAC-03.1	Do you have a program in place that includes the ability to monitor changes to the regulatory requirements in relevant jurisdictions, adjust your security program for changes to legal requirements, and ensure compliance with relevant regulatory requirements?		

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Business Continuity Management & Operational Resilience	Business Continuity Testing	BCR-02.1	Are business continuity plans subject to testing at planned intervals or upon significant organizational or environmental changes to ensure continuing effectiveness?		
	Policy	BCR-10.1	Are policies and procedures established and made available for all personnel to adequately support services operations' roles?		
	Retention Policy	BCR-11.1	Do you have technical capabilities to enforce tenant data retention policies?		
		BCR-11.3	Have you implemented backup or recovery mechanisms to ensure compliance with regulatory, statutory, contractual or business requirements?		
BCR-11.7		Do you test your backup or redundancy mechanisms at least annually?			
Change Control & Configuration Management	Unauthorized Software Installations	CCC-04.1	Do you have controls in place to restrict and monitor the installation of unauthorized software onto your systems?		
Data Security & Information Lifecycle Management	E-commerce Transactions	DSI-03.1	Do you provide standardized (e.g. ISO/IEC) non-proprietary encryption algorithms (3DES, AES, etc.) to tenants in order for them to protect their data if it is required to move through public networks (e.g., the Internet)?		
		DSI-03.2	Do you utilize open encryption methodologies any time your infrastructure components need to communicate with each other via public networks (e.g., Internet-based replication of data from one environment to another)?		
	Nonproduction Data	DSI-05.1	Do you have procedures in place to ensure production data shall not be replicated or used in non-production environments?		
	Secure Disposal	DSI-07.1	Do you support the secure deletion (e.g., degaussing/cryptographic wiping) of archived and backed-up data?		
		DSI-07.2	Can you provide a published procedure for exiting the service arrangement, including assurance to sanitize all computing resources of tenant data once a customer has exited your environment or has vacated a resource?		

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Datacenter Security	Asset Management	DCS-01.2	Do you maintain a complete inventory of all of your critical assets located at all sites/ or geographical locations and their assigned ownership?		
	Controlled Access Points	DCS-02.1	Are physical security perimeters (e.g., fences, walls, barriers, guards, gates, electronic surveillance, physical authentication mechanisms, reception desks, and security patrols) implemented for all areas housing sensitive data and information systems?		
	User Access	DCS-09.1	Do you restrict physical access to information assets and functions by users and support personnel?		
Encryption & Key Management	Key Generation	EKM-02.1	Do you have a capability to allow creation of unique encryption keys per tenant?		
	Encryption	EKM-03.1	Do you encrypt tenant data at rest (on disk/storage) within your environment?		
Governance and Risk Management	Baseline Requirements	GRM-01.1	Do you have documented information security baselines for every component of your infrastructure (e.g., hypervisors, operating systems, routers, DNS servers, etc.)?		
	Policy	GRM-06.1	Are your information security policies and procedures made available to all impacted personnel and business partners, authorized by accountable business role/function and supported by the information security management program as per industry best practices (e.g. ISO 27001, SOC 2)?		
	Policy Enforcement	GRM-07.1	Is a formal disciplinary or sanction policy established for employees who have violated security policies and procedures?		
	Policy Reviews	GRM-09.1	Do you notify your tenants when you make material changes to your information security and/or privacy policies?		
		GRM-09.2	Do you perform, at minimum, annual reviews to your privacy and security policies?		

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Human Resources	Asset Returns	HRS-01.1	Upon termination of contract or business relationship, are employees and business partners adequately informed of their obligations for returning organizationally-owned assets?		
	Background Screening	HRS-02.1	Pursuant to local laws, regulations, ethics, and contractual constraints, are all employment candidates, contractors, and involved third parties subject to background verification?		
	Employment Agreements	HRS-03.1	Do your employment agreements incorporate provisions and/or terms in adherence to established information governance and security policies?		
	Employment Termination	HRS-04.1	Are documented policies, procedures, and guidelines in place to govern change in employment and/or termination?		
	Training / Awareness	HRS-09.5	Are personnel trained and provided with awareness programs at least once a year?		
Identity & Access Management	Audit Tools Access	IAM-01.1	Do you restrict, log, and monitor access to your information security management systems (e.g., hypervisors, firewalls, vulnerability scanners, network sniffers, APIs, etc.)?		
		IAM-01.2	Do you monitor and log privileged access (e.g., administrator level) to information security management systems?		
	User Access Policy	IAM-02.1	Do you have controls in place ensuring timely removal of systems access that is no longer required for business purposes?		
	Policies and Procedures	IAM-04.1	Do you manage and store the identity of all personnel who have access to the IT infrastructure, including their level of access?		

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Identity & Access Management	Source Code Access Restriction	IAM-06.1	Are controls in place to prevent unauthorized access to your application, program, or object source code, and assure it is restricted to authorized personnel only?		
		IAM-06.2	Are controls in place to prevent unauthorized access to tenant application, program, or object source code, and assure it is restricted to authorized personnel only?		
	User Access Restriction / Authorization	IAM-08.1	Do you document how you grant, approve and enforce access restrictions to tenant/customer credentials following the rules of least privilege?		
	User Access Reviews	IAM-10.1	Do you require a periodical authorization and validation (e.g. at least annually) of the entitlements for all system users and administrators (exclusive of users maintained by your tenants), based on the rule of least privilege, by business leadership or other accountable business role or function?		
	User Access Revocation	IAM-11.1	Is timely deprovisioning, revocation, or modification of user access to the organizations systems, information assets, and data implemented upon any change in status of employees, contractors, customers, business partners, or involved third parties?		
Infrastructure & Virtualization Security	Audit Logging / Intrusion Detection	IVS-01.1	Are file integrity (host) and network intrusion detection (IDS) tools implemented to help facilitate timely detection, investigation by root cause analysis, and response to incidents?		
		IVS-01.2	Is physical and logical user access to audit logs restricted to authorized personnel?		
		IVS-01.5	Are audit logs reviewed on a regular basis for security events (e.g., with automated tools)?		

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Infrastructure & Virtualization Security	Clock Synchronization	IVS-03.1	Do you use a synchronized time-service protocol (e.g., NTP) to ensure all systems have a common time reference?		
	OS Hardening and Base Controls	IVS-07.1	Are operating systems hardened to provide only the necessary ports, protocols, and services to meet business needs using technical controls (e.g., antivirus, file integrity monitoring, and logging) as part of their baseline build standard or template?		
	Production / Non-Production Environments	IVS-08.1	For your SaaS or PaaS offering, do you provide tenants with separate environments for production and test processes?		
		IVS-08.3	Do you logically and physically segregate production and non-production environments?		
	Segmentation	IVS-09.1	Are system and network environments protected by a firewall or virtual firewall to ensure business and customer security requirements?		
	VMM Security - Hypervisor Hardening	IVS-11.1	Do you restrict personnel access to all hypervisor management functions or administrative consoles for systems hosting virtualized systems based on the principle of least privilege and supported through technical controls (e.g., two-factor authentication, audit trails, IP address filtering, firewalls and TLS-encapsulated communications to the administrative consoles)?		
	Wireless Security	IVS-12.1	Are policies and procedures established and mechanisms configured and implemented to protect the wireless network environment perimeter and to restrict unauthorized wireless traffic?		
		IVS-12.2	Are policies and procedures established and mechanisms implemented to ensure wireless security settings are enabled with strong encryption for authentication and transmission, replacing vendor default settings (e.g., encryption keys, passwords, SNMP community strings)?		

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Infrastructure & Virtualization Security	Wireless Security	IVS-12.3	Are policies and procedures established and mechanisms implemented to protect wireless network environments and detect the presence of unauthorized (rogue) network devices for a timely disconnect from the network?		
Interoperability & Portability	APIs	IPY-01.1	Do you publish a list of all APIs available in the service and indicate which are standard and which are customized?		
Mobile Security	Approved Applications	MOS-03.1	Do you have a policy enforcement capability (e.g., XACML) to ensure that only approved applications and those from approved application stores can be loaded onto a mobile device?		
Security Incident Management, E-Discovery, & Cloud Forensics	Incident Management	SEF-02.1	Do you have a documented security incident response plan?		
		SEF-02.4	Have you tested your security incident response plans in the last year?		
	Incident Reporting	SEF-03.1	Are workforce personnel and external business relationships adequately informed of their responsibility, and, if required, consent and/or contractually required to report all information security events in a timely manner?		
		SEF-03.2	Do you have predefined communication channels for workforce personnel and external business partners to report incidents in a timely manner adhering to applicable legal, statutory, or regulatory compliance obligations?		
	Incident Response Legal Preparation	SEF-04.4	Do you enforce and attest to tenant data separation when producing data in response to legal subpoenas?		
Supply Chain Management, Transparency, and Accountability	Incident Reporting	STA-02.1	Do you make security incident information available to all affected customers and providers periodically through electronic methods (e.g., portals)?		
	Network / Infrastructure Services	STA-03.1	Do you collect capacity and use data for all relevant components of your cloud service offering?		
	Third Party Agreements	STA-05.4	Do third-party agreements include provision for the security and protection of information and assets?		
		STA-05.5	Do you have the capability to recover data for a specific customer in the case of a failure or data loss?		

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Supply Chain Management, Transparency, and Accountability	Supply Chain Metrics	STA-07.4	Do you provide tenants with ongoing visibility and reporting of your operational Service Level Agreement (SLA) performance?		
	Third Party Audits	STA-09.1	Do you mandate annual information security reviews and audits of your third party providers to ensure that all agreed upon security requirements are met?		
Threat and Vulnerability Management	Antivirus / Malicious Software	TVM-01.1	Do you have anti-malware programs that support or connect to your cloud service offerings installed on all of your IT infrastructure network and systems components?		
	Vulnerability / Patch Management	TVM-02.5	Do you have a capability to patch vulnerabilities across all of your computing devices, applications, and systems?		
	Mobile Code	TVM-03.1	Is mobile code authorized before its installation and use, and the code configuration checked, to ensure that the authorized mobile code operates according to a clearly defined security policy?		
Additional Topics	Software Components		What packages or software components are bundled with or used as part of your product?		
	Single Sign-On		Does your product support Single Sign-On (SSO)? If so, is there any additional cost or licensing associated with SSO usage?		
	Vulnerability Management SLAs		When vulnerabilities are discovered, what are the timeframes under which they are addressed by your organization? Please respond with your SLA for remediation of Critical, High, Moderate, and Low severity vulnerabilities.		
	Cloud Architecture		Please describe your cloud architecture.		
	Availability		Please identify the regions in which your cloud instances reside. In which specific regions would NYSTRS' data and/or services reside?		
	Capacity Testing		Does your BC/DR plan include capacity planning and testing to verify that all services will run outside of the primary region?		