



secure **efficient** Blank is **compliant** **sustainable**

Data Sanitization 101: The Fundamentals of Secure Data Destruction

Yusuf Iqbal Vieri
Solution Consultant
Tech Titan – Sole Distributor of Blanco

blanco.com/blank-is

Tech Titan Solutions Pillars

IT Infrastructure & Network Security



Endpoint & Mobile Security



Server & Application Security



Cybersecurity Training



Data Protection Solutions



Offensive Security Solutions



SOC Solution







**Many of us
associates
Blanco with this..**



About Blancco



Reduce Risk.
Increase Efficiency.
Be Sustainable.™

1997

Founded

2021

Carbon neutrality
achieved

350+

Employees worldwide

Acquired by
Francisco Partners

Dec 2023

20+

Countries with Blancco
offices

70

Countries served

2000+

Customers

24x7

Customer support
globally

Blancco Service Stats



Reduce Risk.
Increase Efficiency.
Be Sustainable.™

100%

Tamper-proof
audit trail

100%

Compliance with
regulatory standards

25+

Standards for data
erasure

14+

Global certifications,
approvals &
recommendations

40+

Patents granted or filed

150K

Data erasures
performed daily

74m kg

Devices sanitized in FY22

0

Data breaches

Data Erasure

Data erasure is the software-based method of securely overwriting data from any data storage device using zeros and ones onto all sectors of the device. By overwriting the data on the storage device, the data is rendered unrecoverable and achieves data sanitization.

Why Consider It?



**Data
Security**



**Compliance and
Regulations**



Sustainability



**Efficiencies and
Money Saving**

- ✓ Includes verification & certification with every erasure
- ✓ Supports environmental initiatives
- ✓ Allows organizations to retain the resale value of the storage devices

The most certified data erasure solution in the world



Reduce Risk.
Increase Efficiency.
Be Sustainable.™

We go above and beyond to achieve compliance

We meet the highest standards for secure data erasure in accordance with privacy and security regulations across the globe. Blanco Data Eraser solutions support 25+ erasure standards, including:

- ❑ Air Force System Security Instruction 5020
- ❑ Aperiodic Random Overwrite
- ❑ Australian Government Information Security Manual (AGISM)
- ❑ Blanco SSD Erasure
- ❑ Bruce Schneier's Algorithm
- ❑ BSI-GS
- ❑ BSI-GSE
- ❑ CESG CPA – Higher Level
- ❑ DoD 5220.22 M
- ❑ DoD 5220.22 M ECE
- ❑ NIST 800-88 Clear
- ❑ NIST 800-88 Purge
- ❑ Firmware Based Erasure
- ❑ Extended Firmware Based Erasure
- ❑ IEEE 2883-2022 Clear
- ❑ IEEE 2883-2022 Purge
- ❑ HMG Infosec Standard 5, Higher Standard
- ❑ HMG Infosec Standard 5, Lower Standard
- ❑ National Computer Security Center (NCSCTG-025)
- ❑ Navy Staff Office Publications (NAVSO P-5239-26)
- ❑ NSA 130-1
- ❑ OPNAVINST 5239.1A
- ❑ Peter Gutmann's Algorithm
- ❑ U.S. Army AR380-19
- ❑ Royal Canadian Mounted Police RCMP TSSIT OPS-II
- ❑ BSI-2011-VS
- ❑ Cryptographic Erasure
- ❑ TCG Cryptographic Erasure
- ❑ Random Byte Overwrite (3x)



AUSTRALASIAN INFORMATION SECURITY EVALUATION PROGRAM

This is to certify that

Blancco Drive Eraser v6.9.1

produced by

Blancco Technology Group

has been evaluated under the terms of the

Australasian Information Security Evaluation Program

in the category of

Data Protection

and complies with the requirements of

Common Criteria EAL 2

(original signed)

Abigail Bradshaw CSC

Head Australian Cyber Security Centre

05 June 2020



The IT product identified in this certificate has been evaluated in an accredited and licensed evaluation facility in Australia using the Common Criteria methodology for IT Security Evaluation, (Version 3.1 Revision 5), for conformance to the Common Criteria for IT Security Evaluation, (Version 3.1 Revision 5). This certificate applies only to the specific version and release of the product in its evaluated configuration and in conjunction with the evaluation Certificate Present. The evaluation has been conducted in accordance with the provisions of the Australasian Information Security Evaluation Program (AISEP) and the evaluation facility in the evaluation technical report are available with the evidence submitted. This certificate is not an endorsement of the IT product by the AISEP or by any other organization that recognizes or gives effect to this certificate, and no warranty of the IT product by the AISEP or by any other organization that recognizes or gives effect to this certificate, is either expressed or implied.

ACSC

Australian
Cyber Security
Centre



Common Criteria

ADISA[®]

PRODUCT CLAIMS TESTING CERTIFICATE

CLAIM NUMBER: ADPC0132 MADE BY: OMKAR ZUNJURKE
OF: BLANCCO TECHNOLOGY GROUP IP OY

was tested using the
ADISA Product Claims Test Method v1.0.

ADISA CERTIFIES THAT
BLANCCO DRIVE ERASER V7.2.0

was executed on:
SanDisk 128Gb SSD Model: SDSSDA-120G-G27 (SATA)
Kingston RBUSNS8154P3256GJ1, 256GB (NVMe)

and achieved the following results as outlined in the testing method.

TESTING	DATE	VALID UNTIL	RESULT
Test Level 2	11.02.2022	11.02.2025	PASS

This test validates that this product when used in accordance with the specification within claims test document ADPC0132 can be used to sanitize data against ADISA Test Level 2 on the sample of devices identified in the claim.

For and on behalf of ADISA

Steve Mellings – Founder

For further information please contact ADISA today on 0044 1582 361743
or email us info@adisa.global

VALIDITY OF CERTIFICATE
Due to potential changes in threat actor's capability the certificate is due for revalidation at a maximum of 12 months from date of issue.

DISCLAIMER
Use of this certified product for the purpose of sanitizing data from devices tested needs to be done so after a risk assessment process. ADISA reserves the right to review the validity of this award upon changes in threat landscape.

LIABILITY
ADISA accepts no liability for any claims resulting from the use of the product tested.



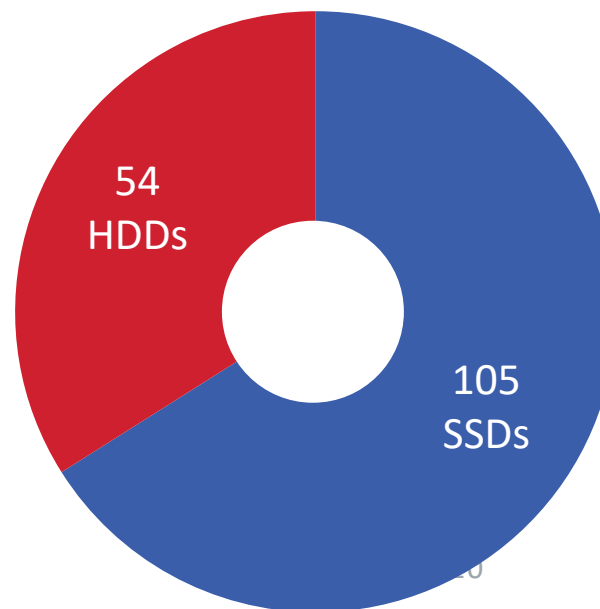
Reduce Risk.
Increase Efficiency.
Be Sustainable.™

Blancco Drive Eraser is Common Criteria and ADISA Certified

- In June of 2020, the Australasian Certification Authority (ACA) awarded Blancco Drive Eraser Common Criteria certification via its Australasian Information Security Evaluation Program (AISEP).
- The award is recognised by all members of the Common Criteria Recognition Arrangement (CCRA).
- ADISA has issued a certificate for Blancco Drive Eraser v7.2.0, confirming that it can sanitize data against ADISA Test Level 2 on specified devices. The certificate is valid for 12 months from the issue date and must be revalidated due to potential changes in threat actor's capability. ADISA accepts no liability for any claims resulting from the product's use and requires a risk assessment process to be done before using it for data sanitization.

More than 15% of
drives tested
contained sensitive
information

ebay



Between September and October 2018, Blanco IT staff in the U.S., Germany, Finland and the U.K. hit eBay, the world's largest online marketplace, to purchase over 150 used SSDs and HDDs

Study at a Glance

Total Drives Evaluated: 159

Total Drives with some Type of Data Found: 66

Total Drives with PII Found: 25

But What About?



Encryption

- ❓ Is not applied to all data, creating a foothold for entry
- ❓ Duplicate keys, human error, manufacturer missteps create gaps in protection
- ❓ Drives may not be encrypted from the very beginning
- ❓ Encryption algorithms have a shelf life; erasure is “quantum secure”



File Shredding, Formatting, Deleting

- ❓ Data destruction is unverified, falling short of sanitization standards
- ❓ These methods have been proven to leave data behind
- ❓ Lack of certified results fails proof of regulatory compliance
- ❓ Often manual and time consuming



Physical Destruction

- ❓ Often relies on short or long-term storage periods with data intact
- ❓ Vulnerable to chain-of-custody and audit trail gaps
- ❓ Poorly applied or mismatched destruction methods fail to render data unrecoverable
- ❓ Generates needless e-waste and shortcuts life of functional devices



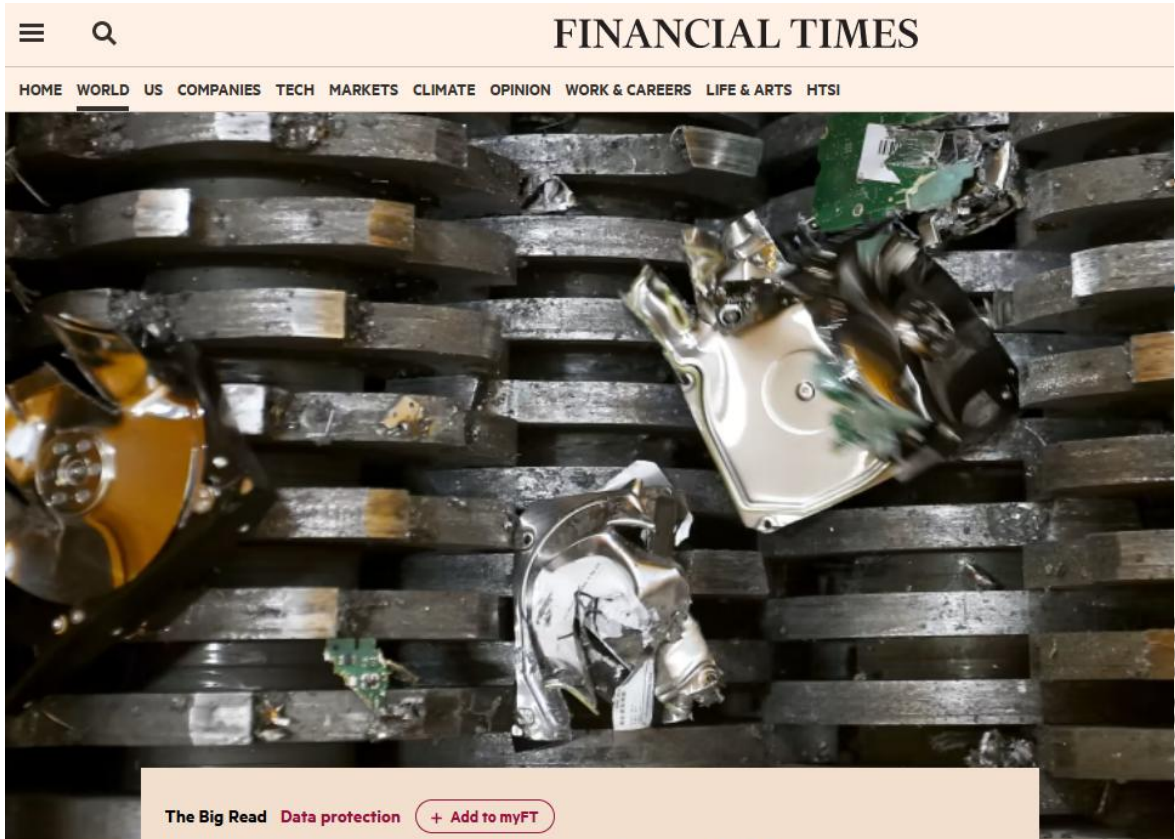
Blank is
sustainable

**Blank is
sustainable**

Destruction and Sustainability



What not to do!



FT BIG READ. TECHNOLOGY

Companies like Amazon and Microsoft routinely destroy millions of used hard drives in the name of data security – but industry insiders say they are ignoring a better, greener and cheaper option.

By Alexandra Heal and Anna Gross

‘We shred everything’

The Big Read Data protection + Add to myFT

Why Big Tech shreds millions of storage devices it could reuse

Members the sadness of pose of our ft home to

er of Tech- company in large win- in London used hard company. drives and figure sum

ad, a lorry ite and the re dogged personnel. could shred

ht, "This is me. "They

systems's secure and secure of leave the building – despite the fact we could wipe them on site then sell to a new customer who could make use of them for years to come... It was a complete waste."

Parne had experienced first-hand the ubiquitous industry practice of shredding data storage devices.

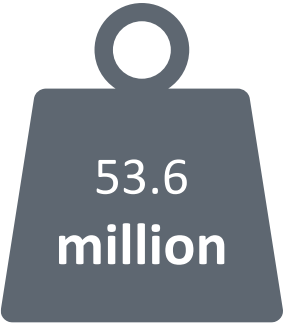
Every day when you fire off emails, update a Google document or take a photo, the data generated is not stored in a "cloud" as the metaphor suggests. Instead it is stored across several of the world's estimated 70mm servers, each



<https://www.ft.com/content/31185370-87f3-4ecb-b64d-341bbc4e5c22>



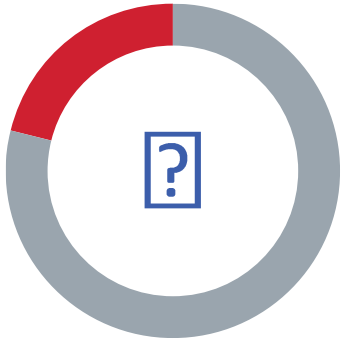
E-Waste on the Rise!



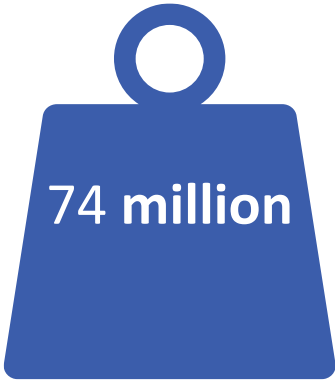
A record **53.6 million metric tonnes** of electronic waste was generated worldwide in 2019 according to the UN's Global E-waste Monitor 2020



106 x the weight of the Burj Khalifa, the tallest building in the world



21% increase in just five years.



Expected to increase to **74 million metric tonnes** by 2030

Source: www.globalewaste.org



Sustainability & ESG

The Green SIDE of Blanco

A carbon-neutral supplier, we reinforce enterprise ESG goals while prioritizing strict data protection and regulatory compliance.



Secure Device Reuse

We protect businesses while extending the life of functional technology.



Diminished ROT

We lessen data storage needs—and related emissions.



IT Asset Circularity

We slow the need for new device creation.



E-waste Reduction

We minimize landfill-bound electronics—and their detrimental impact to developing regions.

In FY21, Blanco securely sanitized an estimated 68.2M kg of electronic equipment, with a pre-use carbon footprint of 5.6B kg.



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**Blank is
compliant**

Regulations



What to comply with?

Regulations are here to stay – and growing



EU General Data Protection Regulation: Right to be Forgotten

- ❑ FINES - Non-Compliance could result in up to 4% of turnover OR €20 MM – whatever is GREATER!
- ❑ ANY EU citizen can demand his / her records be expunged – and the organization this is requested from must provide proof
- ❑ Went into effect May 2018—companies are already receiving large fines



Most Countries

Now Have Data Protection Laws

Global & Regional Data Protection Laws & Standards

- ❑ Japan’s Act on the Protection of Personal Information – right to erasure
- ❑ Security frameworks & regulations – NIST: SP 800-88r1 – sanitization in US
- ❑ ISO 27001 – requires any sensitive data be securely overwritten prior to disposal or re-use
- ❑ PIPEDA (Canada) & HIPAA (U.S.) specify healthcare data must be erased after it passes its retention date

Number of country-specific
data-protection laws:



Regulations and Compliance



Pindaan Akta Perlindungan Data Peribadi dibentang di Dewan Rakyat

Oleh Farah Marshita Abdul Patah - Julai 10, 2024 @ 2:16pm
farahmarshita@bh.com.my



Menteri Digital, Gobind Singh Deo. - Foto fail BERNAMA

KUALA LUMPUR: Rang Undang-Undang (RUU) Perlindungan Data Peribadi (Pindaan) 2024 yang antara lain bertujuan memastikan perundangan perlindungan data peribadi di Malaysia adalah selaras dengan piawaian, perubahan serta perkembangan undang undang pada peringkat global dibentang untuk bacaan kali pertama di Dewan Rakyat hari ini.

RUU itu dibentang Menteri Digital, Gobind Singh Deo yang memaklumkan bacaan kali kedua RUU itu dijadual dibentangkan pada mesyuarat yang sama.

Malaysia's Personal Data Protection Act Gets Major Updates!

On 16th July 2024, the Personal Data Protection (Amendment) Bill 2024 was passed by the Malaysian Parliament following its second and third readings presented by Minister of Digital, YB Gobind Singh Deo. This amendments significantly boosts and strengthens the data privacy protection in Malaysia.

- ❑ Increased Fines! – The maximum penalty for violating any of the 7 Personal Data Protection Principles is more than DOUBLE, from RM300,000 to RM1 million
- ❑ Data Processor Liability – Data Processors now face statutory liability for breaching the Data Security Principle
- ❑ Data Portability – Individuals gains the right to request their data to be transferred to another service provider
- ❑ Mandatory Data Breach Notification – Both Data Controllers and Processors MUST notify the Personal Data Protection Commission, Data Subjects in case of a data breach
- ❑ Data Protection Officers – The appointment of a DPO becomes MANDATORY for both Data Controllers & Processors



ISO 27001

ISO is an independent, non-governmental international organization with a membership of 164 national standards bodies. Its headquarters are in Switzerland.

“All items of equipment containing storage media should be verified to ensure that any sensitive data and licensed software has been removed or securely overwritten prior to disposal or re-use.”

(§ 11.2.7 Control, ISO 27001:2013, Secure Disposal or Re-Use of Equipment)

Note: Now under re-development

ISO/IEC CD 27002

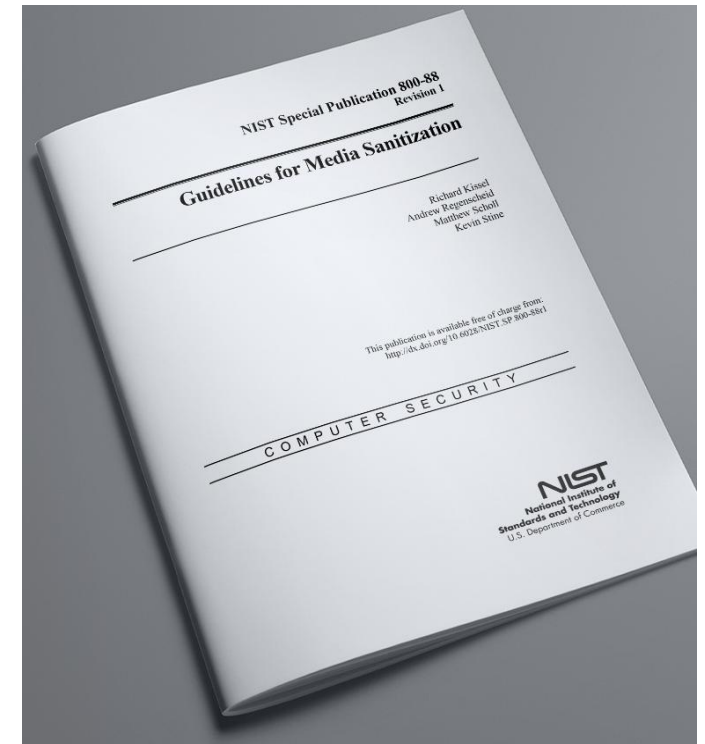
(ISO reviews every five years)

The Importance of Verification



“*Verifying the selected information sanitization and disposal process is an essential step in maintaining confidentiality. Two types of verification should be considered. The first is verification every time sanitization is applied...The second is a representative sampling verification, applied to a selected subset of the media. If possible, the sampling should be executed by personnel who were not part of the original sanitization action.*”

— NIST SP 800-88, Rev.1,
“Information Sanitization and Decision Making.”

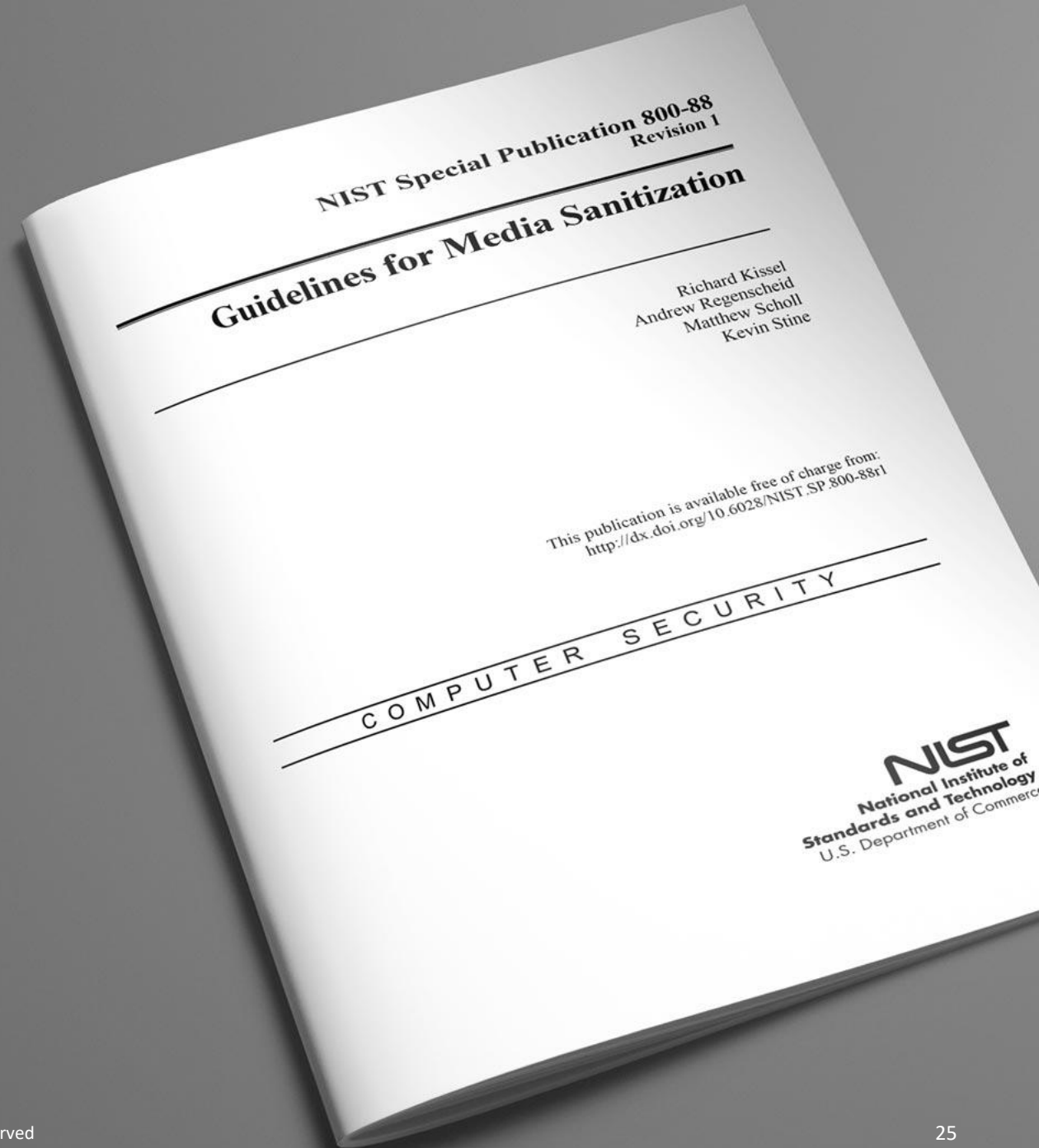


NIST 800-88R1 – A global reference since 2014

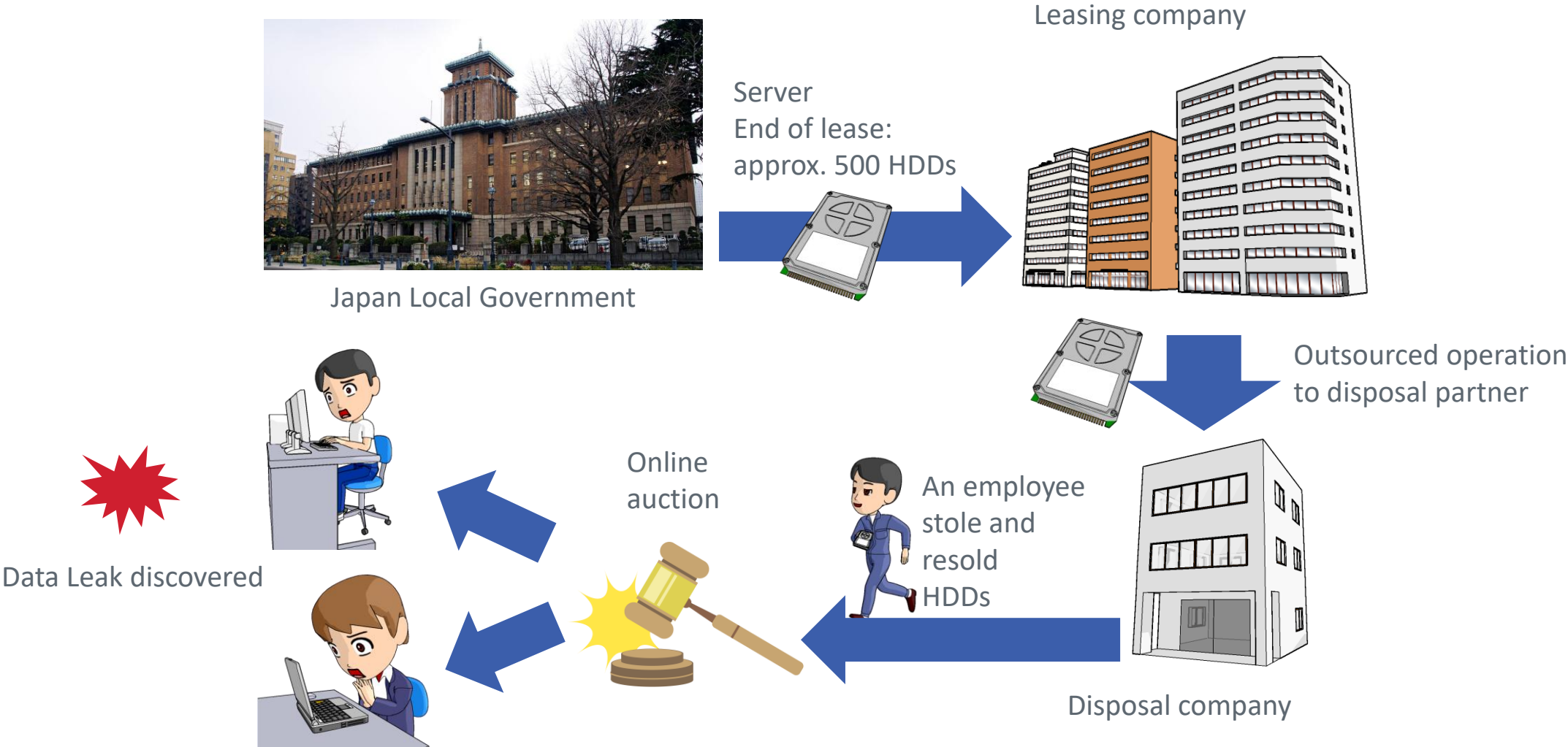
A U.S. government document that provides methodical guidance when it comes to sanitizing data from electronic storage media and how to implement secure best practices.

Implementation – Verification – Audit trail

Purge: The highest security level, can be achieved for both HDD and SSD drives.



Chain of Custody challenges



Morgan Stanley to pay \$35M after hard drives with 15M customers' personal data turn up in auction

Carly Page @carlypage_ / 10:05 PM GMT+8 • September 21, 2022

 Comment



Blank is secure



Blanco is the only data erasure company with end-to-end automation for sanitization, diagnostics, and reporting

Blanco Hardware Solutions

Secure, on-premise erasure of loose drives and drive enclosures within data centers or large IT facilities



Blanco Drive Verifier

Secure drive erasure verification for PCs, laptops, and loose drives



Blanco Mobile

Diagnostics and secure data erasure of smartphones and tablets



Blanco Removable Media Eraser

Secure data erasure of removable flash media devices stored within smartphones, tablets, network routers and cameras



Blanco Management Portal

Centralized data erasure reporting and management across your entire IT asset portfolio—on-premise or in the cloud



Blanco Drive Eraser

High speed, efficient secure data erasure of complex SSD and NVMe drives, including self-encrypting drives



Blanco Virtual Machine Eraser

Secure data erasure of complicated server and storage environments



Blanco LUN Eraser

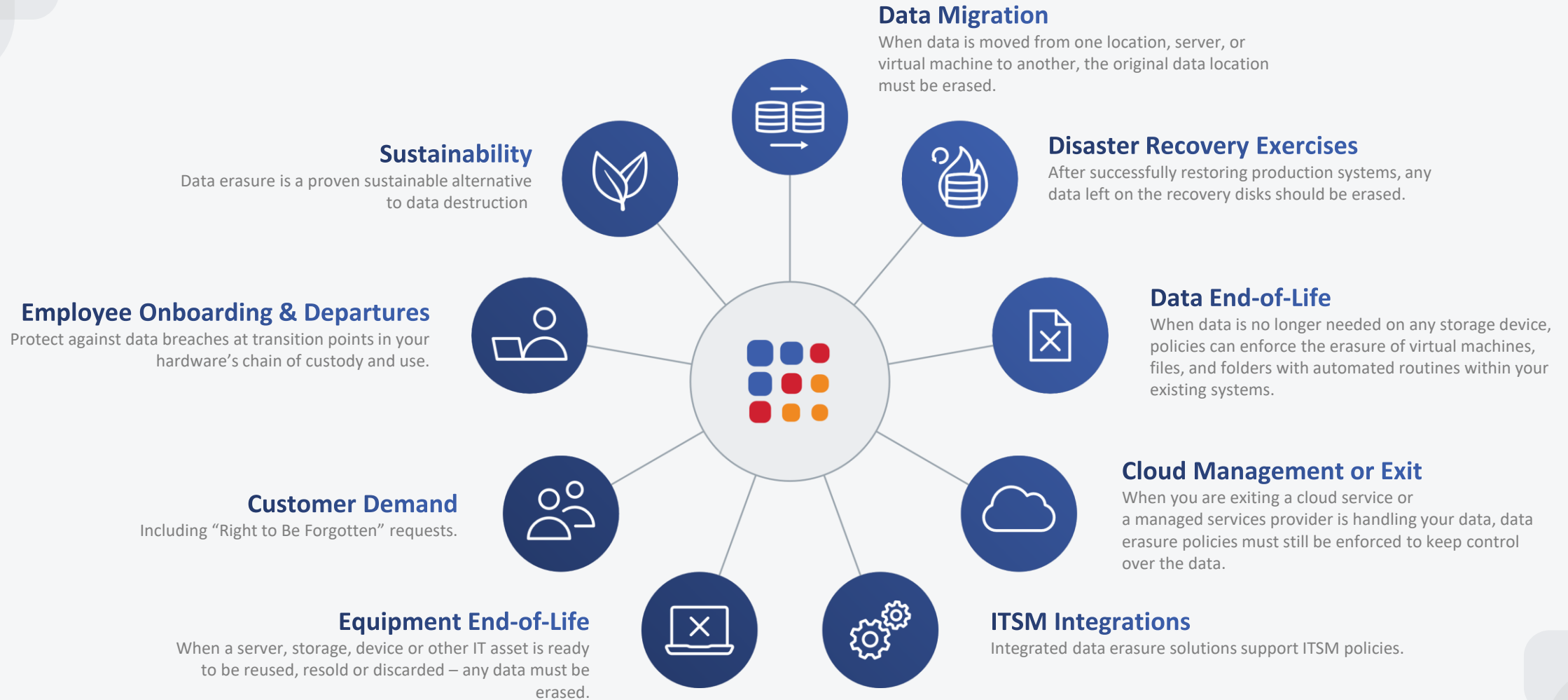
Secure data erasure of LUNs in an active storage environment, connected to both physical and virtual machines



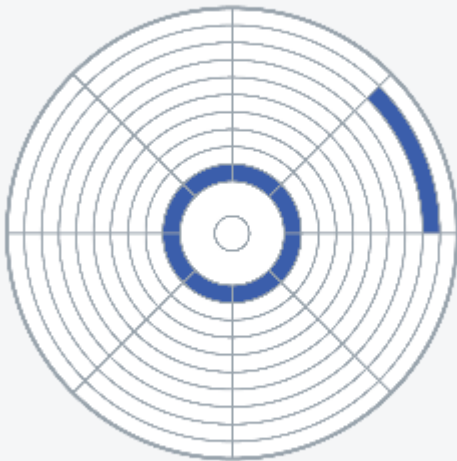
Blanco File Eraser

Secure data erasure of files and folders on active PCs, laptops and servers

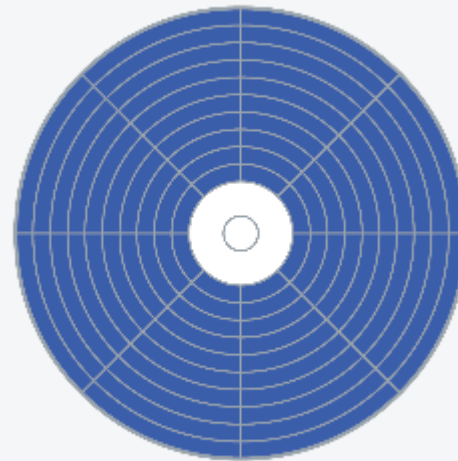
When is data erasure needed?



Delete / Format



- Only master boot record / table of content (book's "index") are removed
- Area on the disk is simply marked as available
- Old data (book's "pages") is still there



- Entire size of the disk is confirmed from the disk itself
- Every single sector of the drive is erased

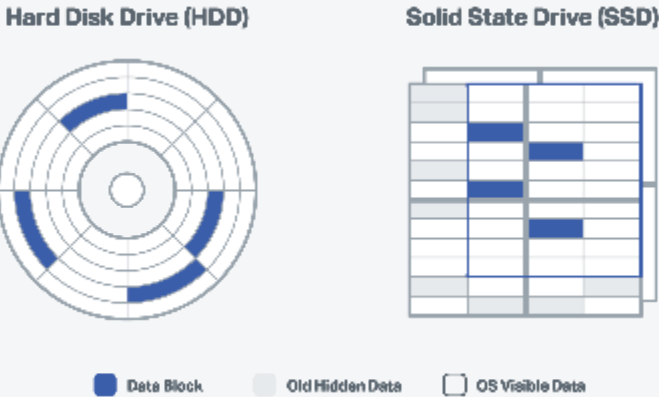
4 Steps:

1. Overwrite
2. Verification
3. Report
4. Audit

SSD Physical Destruction Challenges



Disintegration:
Disintegrate into particles that are nominally
2 millimeter edge length.



SSD Challenges

- Freeze Locks
- Wear Leveling
- Data Compression
- Unreliable Firmware Commands
- Corrupted Blocks
- Secure-Erase



Blancco Patented Solution

1. Freeze lock Removal
2. Proprietary Erasure Sequence
 - i. Combines SW overwrite and FW commands
3. Erasure Validation
 - i. Identifies malfunctions and preformed processes

2022-02-22 10:26:30 (+0000), BLANCCO DRIVE ERASER 7.2.0, ASUSTEK COMPUTER INC., Z170-WS, SYSTEM SERIAL NUMBER

Data Erasure Report



Licensed To	Research
Erasure Results	
Disk: 1 (1-1)	Vendor: Seagate Size: 2000GB HPA: Doesn't exist Health Status: good
Remapped Sector(S) After Erasure:	0
Start/End Time:	2022-02-22 08:26:21 (+0000) / 2022-02-22 09:28:55 (+0000)
Duration:	01:02:34
Method:	NIST 800-88 Purge - ATA
Erasure Rounds:	2 (1 overwriting, 1 firmware based erasure)
Status:	Erased
Information:	Alternative verification (absence of the previously written pattern) used. Please refer to the manual



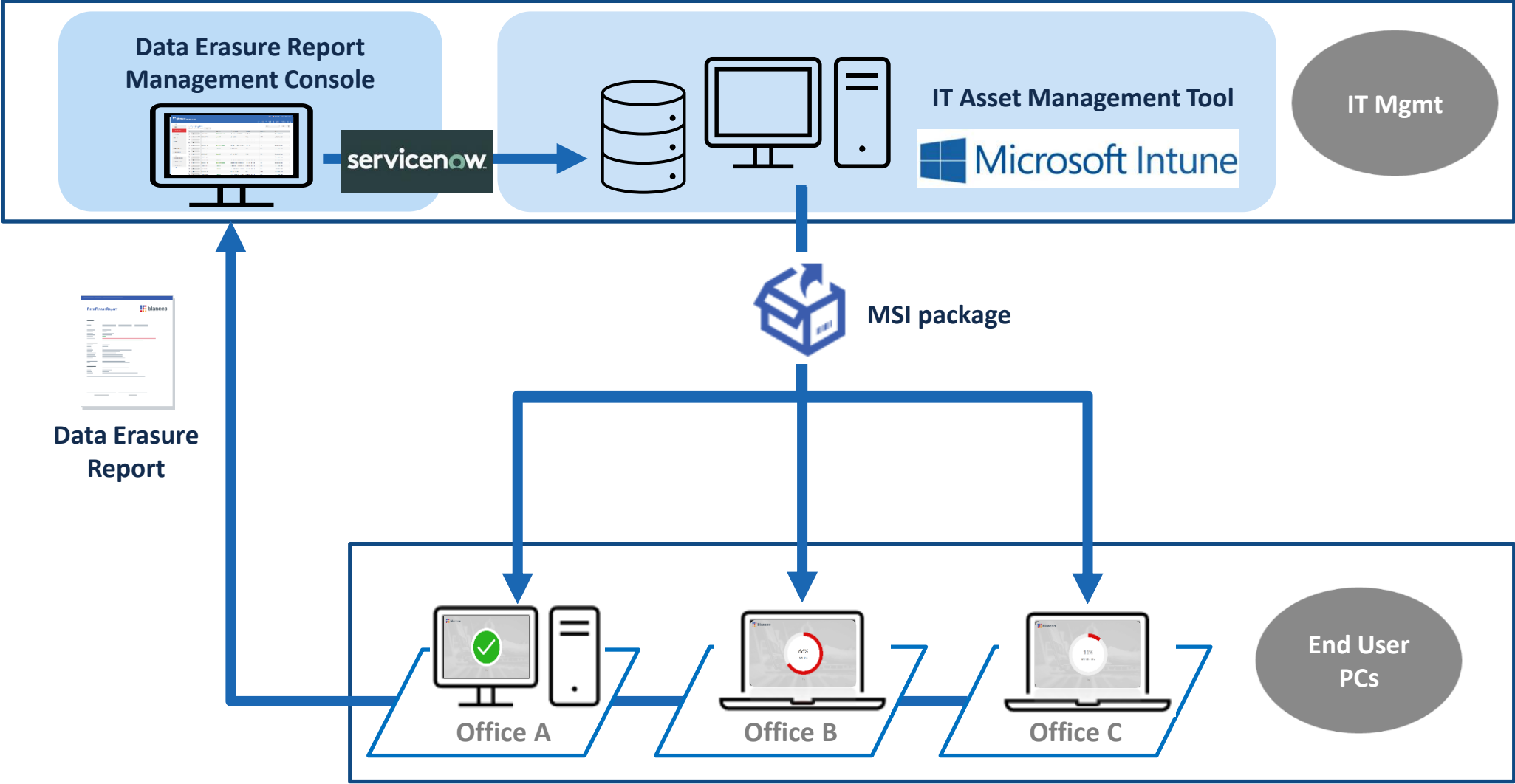
**Blank is
efficient**

Real life



What it can look like when processing professionally?

End point data erasure automation process in practice



Blank is efficient

- 4,000 Servers decommissioned overnight
- Each server had 6x1TB SATA HDD. **Total 24,000 drives**
- Erasure time was 5-8 hours.
Total time from start (boot up) to finish (report collection): 10 hours
- Erasure method was NIST 800-88





Thank you!