

# Combined Reference

## Technology Landscape and Resource Assessment — Full Provenance

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This document reproduces every detail from the Technology Landscape and Resource Assessment with inline provenance tags. Each fact is marked as one of:

- **SOURCED** — directly from a file on the Cloudcore website, with the file path noted
- **INFERRED** — a reasonable conclusion drawn from sourced material, but not explicitly stated

- **INVENTED** — created for the brief; plausible and non-contradictory, but not in the repo

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## Current Technology Stack

### Infrastructure and Operations

System	Purpose	Status	Source / Reasoning
VMware vSphere	Virtualisation (~2,500 VMs)	SOURCED	david_wilson_cloud_infrastructure_architect.m
VMware deployed ~2014	Deployment date	INVENTED	Company founded 2010; virtualisation would be early infrastructure
AWS	Public cloud partner, US-East Ohio default	SOURCED	david_wilson_cloud_infrastructure_architect.m region from docs/policies/
AWS deployed ~2018	Deployment date	INVENTED	Hybrid cloud partnership likely mid-growth
Azure	Secondary cloud partner	SOURCED	david_wilson_cloud_infrastructure_architect.m
Azure deployed ~2019	Deployment date	INVENTED	Secondary to AWS; slightly later adoption
Terraform	IaC, ~70% of new deployments	SOURCED	david_wilson_cloud_infrastructure_architect.m
Terraform deployed ~2020	Deployment date	INVENTED	Modern IaC, mid-maturity adoption
Legacy systems outside IaC	30% gap	SOURCED	Same file (“70% automation coverage; legacy systems manually configured”)
Ansible	Configuration automation	SOURCED	david_wilson_cloud_infrastructure_architect.m docs/interviews/system_administrator.qmd
Ansible deployed ~2019	Deployment date	INVENTED	Replacing Chef; more modern
Some overlap with Chef	Relationship between tools	INFERRED	Both confirmed present; overlap is reasonable assumption
Chef	Legacy configuration management	SOURCED	docs/policies/configuration_change_management

System	Purpose	Status	Source / Reasoning
Chef deployed ~2015, being phased out	Deployment date and status	INVENTED	Early config tool; phase-out inferred from Ansible adoption
Salt	Secondary configuration automation	SOURCED	Same policy document
Salt deployed ~2016	Deployment date	INVENTED	Between Chef and Ansible chronologically
Retained for specific legacy workloads	Usage scope	INVENTED	Plausible reason for keeping a secondary tool
Kubernetes	Container orchestration, limited adoption	SOURCED	michael_thompson_lead_software_developer.md
Kubernetes deployed ~2022	Deployment date	INVENTED	Recent, limited adoption suggests recent deployment
Used for internal apps, not client-facing	Usage scope	SOURCED	Same file (internal microservices)
Prometheus + Grafana	Monitoring and alerting	SOURCED	mark_gonzalez_cto.md
Deployed ~2020	Deployment date	INVENTED	Modern stack, mid-maturity
Feeds	Integration	SOURCED	mark_gonzalez_cto.md (PagerDuty mentioned)
PagerDuty for on-call			

## Security

System	Purpose	Status	Source / Reasoning
Splunk SIEM	Log aggregation, 500-800 daily alerts	SOURCED	mark_gonzalez_cto.md; alert count from docs/policies/
Splunk deployed ~2021	Deployment date	INVENTED	Security build-up period
CrowdStrike	EDR across endpoints	SOURCED	mark_gonzalez_cto.md
CrowdStrike deployed ~2022	Deployment date	INVENTED	Security maturation phase

System	Purpose	Status	Source / Reasoning
Feeds into Splunk	Integration	INFERRED	Standard EDR-SIEM integration; both confirmed present
Palo Alto firewalls	Network perimeter, load-balanced pair	SOURCED	mark_gonzalez_cto.md, carlos_mendes_networks_specialist.md
Deployed ~2017	Deployment date	INVENTED	Pre-dates security build-up
Rule base reviewed quarterly post-breach	Review cadence	INFERRED	Post-breach remediation includes firewall review; “quarterly” is assumed
Cisco switches	Network infrastructure, 802.1x	SOURCED	carlos_mendes_networks_specialist.md; docs/interviews/network_engineer.qmd
Deployed ~2014	Deployment date	INVENTED	Core networking from early data centre
Segmentation improved post-breach	Status	SOURCED	carlos_mendes_networks_specialist.md
Tenable.io	Weekly vulnerability scans, 15-day patching	SOURCED	docs/policies/configuration_change_management
Deployed ~2021	Deployment date	INVENTED	Same security build-up period
Auth0	Identity provider, SSO	SOURCED	docs/policies/access_control.qmd
Migrated from Okta Dec 2023	Migration date	SOURCED	Same policy document
Some policies still reference old IdP	Documentation gap	SOURCED	Same policy document (multiple sections reference “Okta”)

### Business Applications

System	Purpose	Status	Source / Reasoning
HubSpot	CRM, email marketing, lead tracking	SOURCED	tom_bradley_marketing_manager.md
Deployed ~2022	Deployment date	INVENTED	CRM migration story context

System	Purpose	Status	Source / Reasoning
Limited integration with operational systems	Gap	SOURCED	jamal_al_sayed_data_analyst.md (data silos confirmed)
ServiceNow	Change management (PRODCM)	SOURCED	docs/policies/change_management.qmd
Deployed ~2023	Deployment date	INVENTED	Recent deployment
Not yet integrated with monitoring	Gap	INVENTED	Plausible given siloed systems
JupiterOne	IT asset management, CMDB	SOURCED	docs/policies/asset_management.qmd
Deployed ~2022	Deployment date	INVENTED	Asset management maturation
AWS automated discovery	Feature	SOURCED	Same policy document
Atlassian (Jira, Confluence)	Project management	SOURCED	docs/policies/approved_software.qmd
Deployed ~2016	Deployment date	INVENTED	Mid-stage adoption
Ticket data not connected to analytics	Gap	INFERRED	No integration between Jira and BI tools is mentioned anywhere
Office 365	Email, productivity	SOURCED	docs/policies/approved_software.qmd
Deployed ~2015	Deployment date	INVENTED	Standard early adoption
Slack	Team communication	SOURCED	Same file
Deployed ~2018	Deployment date	INVENTED	Mid-growth adoption
Some alerting integrations	Feature	INFERRED	Common Slack usage pattern; not explicitly confirmed

## Development

System	Purpose	Status	Source / Reasoning
GitHub Actions	CI/CD, SAST integrated	SOURCED	michael_thompson_lead_software_developer.md

System	Purpose	Status	Source / Reasoning
~70% test coverage	Metric	SOURCED	Same file
ArgoCD	GitOps deployment to Kubernetes	SOURCED	Same file
Used for internal microservices only	Scope	SOURCED	Same file
PostgreSQL	Primary application database	SOURCED	Same file
Encrypted at rest and in transit	Security	SOURCED	docs/policies/data_protection.qmd
Python (FastAPI)	Backend API, 15+ microservices	SOURCED	michael_thompson_lead_software_developer.md
React	Frontend framework	SOURCED	Same file
Legacy PHP	Older application components	SOURCED	Same file
Pre-dates current security standards	Age context	SOURCED	Same file (code “2 years old, pre-current standards” at time of breach)

## Analytics

System	Purpose	Status	Source / Reasoning
Power BI	BI dashboards	SOURCED	jamal_al_sayed_data_analyst.md
Manual data imports from multiple sources	Process	SOURCED	Same file
Excel	Ad-hoc analysis	SOURCED	Same file
Still heavily used for financial/operational reporting	Usage	INFERRED	Backstory describes basic BI tools; Excel is standard fallback

## Notable Gaps

Gap	Status	Source
No data warehouse or data lake	SOURCED	jamal_al_sayed_data_analyst.md, mark_gonzalez_cto.md
No ML/AI platform	SOURCED	mark_gonzalez_cto.md
No MLOps or model management	SOURCED	Same file
No real-time analytics pipeline	SOURCED	jamal_al_sayed_data_analyst.md
No dedicated ETL platform	INFERRED	No ETL tool appears anywhere in the repo

## Data Flow Overview

Element	Status	Source / Reasoning
The entire diagram structure	INVENTED	Repo confirms silos and manual processes; the visual layout is fabricated
Infrastructure telemetry flows to Splunk for security only	INFERRED	Both systems confirmed; separation of monitoring vs security log use is inferred
HubSpot holds marketing/sales data only	SOURCED	tom_bradley_marketing_manager.md
No integration between operational and customer systems	SOURCED	jamal_al_sayed_data_analyst.md
Manual export to Excel/Power BI	SOURCED	Same file
Analyst (Jamal's team) manually correlates	SOURCED	Same file
Static weekly/monthly reports	INFERRED	Reporting cadence not specified; weekly/monthly is assumed

## Key Data Silos Table

Row	Status	Source
Infrastructure metrics: Prometheus/Grafana, Martin Nguyen	SOURCED	mark_gonzalez_cto.md, cloud_service_operations_manager_martin_nug
Connected to PagerDuty (alerting only)	SOURCED	mark_gonzalez_cto.md
Security events: Splunk, Sophia Martines	SOURCED	sophia_martines_ciso.md
Connected to CrowdStrike, firewall logs	SOURCED	mark_gonzalez_cto.md
Support tickets: internal system, Samantha Wong	SOURCED	customer_support_lead_samantha_wong.md
Connected to nothing; manual reporting	INFERRED	No integration mentioned; “nothing” is editorial
Customer records: HubSpot, Lisa Chen	SOURCED	lisa_chen_cmo.md, tom_bradley_marketing_manager.md
Email campaigns only	SOURCED	tom_bradley_marketing_manager.md
Billing: internal system, Aisha Rahman	SOURCED	aisha_rahman_cfo.md
Manual reconciliation	INFERRED	Tight margins and manual processes described; “reconciliation” is assumed
Service usage: provisioning tools, Martin Nguyen	SOURCED	cloud_service_operations_manager_martin_nug
Batch to billing, manual validation	INVENTED	Plausible; no integration details exist
HR/access: Auth0 + AD, Karen Lee / Raj Patel	SOURCED	karen_lee_hr_manager.md, raj_patel_it_manager.md

Partial RBAC; ~40% SOURCED  
over-provisioned

karen\_lee\_hr\_manager.md

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### Manual Processes and Gaps

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Process	Status	Source / Reasoning
Billing reconciliation errors	INVENTED	No specific error rate or process described
Customer health reporting requires manual correlation	SOURCED	jamal_al_sayed_data_analyst.md
Jamal's team builds reports from exported CSVs	INFERRED	Power BI with manual imports confirmed; CSV format assumed
Security-to-operations: no automated ticket creation	INVENTED	Plausible gap; not described
Access provisioning: manual coordination	SOURCED	karen_lee_hr_manager.md
~40% over-provisioned	SOURCED	Same file
Capacity planning: spreadsheet-based	INFERRED	No predictive capability confirmed; spreadsheets are the default tool described

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### Resource Availability

#### Team Capacity Table

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Column: Team / Headcount	Status	Source
All team names and counts	SOURCED	See Brief 2 companion for per-team sources

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Column: Current Commitments	Status	Reasoning
Infrastructure: day-to-day, CSMP, zero trust	SOURCED	csmp_project.md, sophia_martines_ciso.md (zero trust planning)
Development: CSMP primary, legacy, security remediation	SOURCED	csmp_project.md, michael_thompson_lead_software_c
Security: post-breach remediation, monitoring, compliance, zero trust	SOURCED	sophia_martines_ciso.md
Support: 500+ client support, 24/7	SOURCED	sarah_thompson_coo.md
Data: operational reporting, ad-hoc analysis	SOURCED	jamal_al_sayed_data_analyst.md
IT: maintenance, on-call, patching, access management	SOURCED	raj_patel_it_manager.md

Column: Available for AI Work	Status	Reasoning
All availability assessments	INVENTED	Based on described workloads but no team has stated AI availability

### Competing Commitments

Commitment	Status	Source / Reasoning
CSMP consuming most dev capacity	SOURCED	csmp_project.md — described as major project
CSMP is pathway to enterprise expansion	SOURCED	Same file
Any AI initiative competes with CSMP	INFERRED	Logical given shared resources
Post-breach remediation is board-mandated	SOURCED	sophia_martines_ciso.md (board requires monthly updates)
Post-breach work is non-negotiable	INFERRED	Board mandate implies this
Post-breach described as “multi-quarter programme”	INVENTED	Scope of changes described supports this; not explicitly stated
ISO 27001 surveillance audit expected within 6 months	INVENTED	Standard ISO practice; not mentioned in repo

Commitment	Status	Source / Reasoning
SOC 2 Type II annual recertification	INVENTED	Standard practice; not explicitly stated

### Budget Envelope

Detail	Status	Source / Reasoning
\$250,000 proposed ML engineer	INVENTED	See Brief 2 companion
\$180-250K Cloud AI platform	SOURCED	karen_lee_hr_manager.md
\$3-8K/month	INVENTED	Based on market rates
Budget is tight for hire + platform	INFERRED	Arithmetic from sourced salary and invented platform cost

### Timeline Pressures

Detail	Status	Source
Board wants AI positioning	SOURCED	marcell_ziemann_ceo.md
Competitors marketing AI-powered services	SOURCED	Same file
CTO: 6-12 months for data engineering	SOURCED	mark_gonzalez_cto.md
Jamal: 6-12 months for data prep	SOURCED	jamal_al_sayed_data_analyst.md
CSMP delays would affect enterprise expansion	INFERRED	CSMP is described as enterprise pathway; delay impact is logical

### Existing Vendor Relationships

Detail	Status	Source / Reasoning
All vendor names	SOURCED	docs/policies/approved_vendors.qmd (DOC-COMP-007)
Third-party risk assessment strengthened post-breach	SOURCED	sophia_martines_ciso.md
All “Relevance to AI” assessments	INVENTED	Vendor list is sourced; AI capabilities are real product features but applicability to Cloudcore is assumed
Observation about existing AI capabilities not being used	INFERRED	Logical given confirmed tools (Splunk, CrowdStrike, HubSpot) with known AI features
AWS/Azure provide managed AI without new vendor onboarding	INFERRED	Standard cloud partnership benefit

## Previous Change Initiative Outcomes

### ISO 27001 Certification (Success)

Detail	Status	Source / Reasoning
Took nearly 2 years	SOURCED	sophia_martines_ciso.md
Against initial 12-month target	INVENTED	Repo says “nearly two years” implying it took longer than planned; 12-month target is fabricated
Achieved certification	SOURCED	Same file, cloudcore_company_overview.md
Strong executive sponsorship	INFERRED	CISO led it; CEO supportive per backstories
Clear business driver (enterprise clients)	SOURCED	marcell_ziemann_ceo.md
Sophia as dedicated project lead	SOURCED	sophia_martines_ciso.md

Detail	Status	Source / Reasoning
External auditor managed well	INVENTED	Plausible; no audit details in repo
Scope underestimated	INFERRED	“Nearly two years” implies underestimation
Staff resistance to new processes	INVENTED	Plausible for a growing company; not stated
Documentation burden strained team	INVENTED	Plausible given small team; not stated
Resource contention with operational work	INFERRED	Small team, operational demands confirmed
“Lessons for AI” framing	INVENTED	Editorial analysis

### **Auth0 Migration (Partial Success)**

Detail	Status	Source / Reasoning
Migration from Okta to Auth0	SOURCED	<code>docs/policies/access_control.qmd</code>
December 2023 timing	SOURCED	Same document
Policies still reference Okta	SOURCED	Same document (multiple sections)
Session timeout inconsistencies	SOURCED	Same document (conflicting values)
Technical migration completed on schedule	INVENTED	No timeline details exist
Minimal user disruption	INVENTED	Not described
Auth0 integration worked smoothly	INVENTED	Not described
On time and within budget	INVENTED	Not described
No change management plan for docs	INVENTED	The gap exists (sourced); the absence of a plan is inferred

Detail	Status	Source / Reasoning
Training materials not updated	INVENTED	Plausible extension of documented policy gap
No post-migration review conducted	INVENTED	Inferred from ongoing documentation drift
Framing as “partial success”	INVENTED	The repo shows the gap without characterising it
“Lessons for AI” framing	INVENTED	Editorial analysis

### CRM Consolidation (Failure)

Detail	Status	Source / Reasoning
<b>This entire story was invented</b>	INVENTED	See below for sourced foundations
HubSpot is current CRM	SOURCED	tom_bradley_marketing_manager.md
CRM data has duplicates, missing fields	SOURCED	jamal_al_sayed_data_analyst.md
No CRM integration with billing/support	SOURCED	Same file
Sales team adoption incomplete	INFERRED	Marketing uses HubSpot fully; sales pipeline tracking not mentioned
Prior “legacy contact management system”	INVENTED	Something preceded HubSpot; name and nature fabricated
Migration as defined project (2021-2022)	INVENTED	Timeline fabricated
3 months late, 40% over budget	INVENTED	Specific failure metrics fabricated
Sales staff using spreadsheets	INVENTED	Plausible given low CRM adoption; not confirmed
Data quality caused by migration	INVENTED	Problems exist (sourced); migration as cause is assumed
Post-migration cleanup never resourced	INVENTED	Problems persist (sourced); “never resourced” is fabricated
“Lessons for AI” framing	INVENTED	Editorial analysis

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## Summary of Key Constraints

Constraint	Status	Source / Reasoning
Data readiness is primary bottleneck	SOURCED	jamal_al_sayed_data_analyst.md, mark_gonzalez_cto.md
6-12 months preparation	SOURCED	Both files
CSMP consumes development capacity	SOURCED	csmp_project.md
AI needs external resources or delayed timeline	INFERRED	Logical given CSMP commitment
\$250K is tight	INVENTED (amount) / INFERRED (tightness)	Budget is invented; tightness is arithmetic
Change management is known weakness	INFERRED	Auth0 gap is sourced; CRM issues support pattern; “known weakness” is editorial
Security governance required first	SOURCED	sophia_martines_ciso.md
CISO has board backing	SOURCED	Same file (monthly board reporting)

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## Cross-References

Reference	Status
Support docs at cloudcore.eduserver.au/docs/support/	SOURCED — real pages
Policies at cloudcore.eduserver.au/docs/policies/	SOURCED — real pages
Logs at cloudcore.eduserver.au/docs/logs/	SOURCED — real pages

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*This reference document is for instructor use. It combines sourced facts and invented details into a single annotated view of the Technology Landscape and Resource Assessment.*