Faster & Safer Modernization to AWS Powered by CAST

AWS PartnerCast - Dec 12, 2022
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Agenda

1. What is CAST
2. Demo
   - Cloud Readiness Portfolio Assessment on CAST Highlight
   - Application Discovery on CAST Imaging
3. CAST+AWS use case examples
   - Fragmenting a monolith into microservices with CAST Imaging and AWS Migration Hub Refactor Spaces
   - Modernizing a mainframe with CAST and AWS Mainframe Modernization Service

aws

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CAST Highlight and CAST Imaging accelerate migration & modernization of custom applications to AWS, and on AWS

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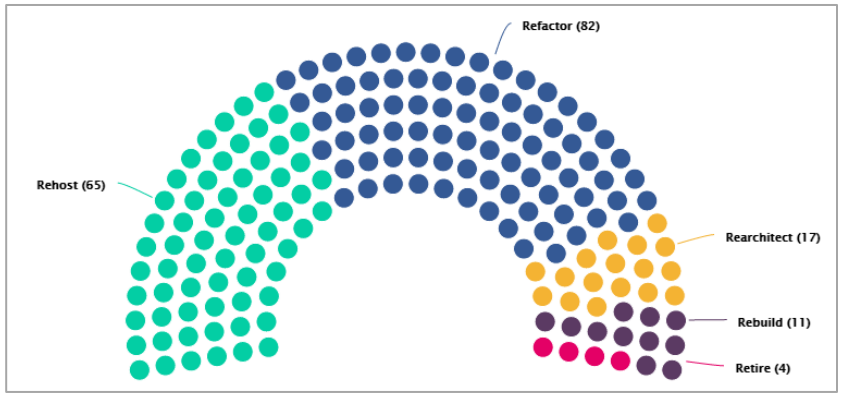
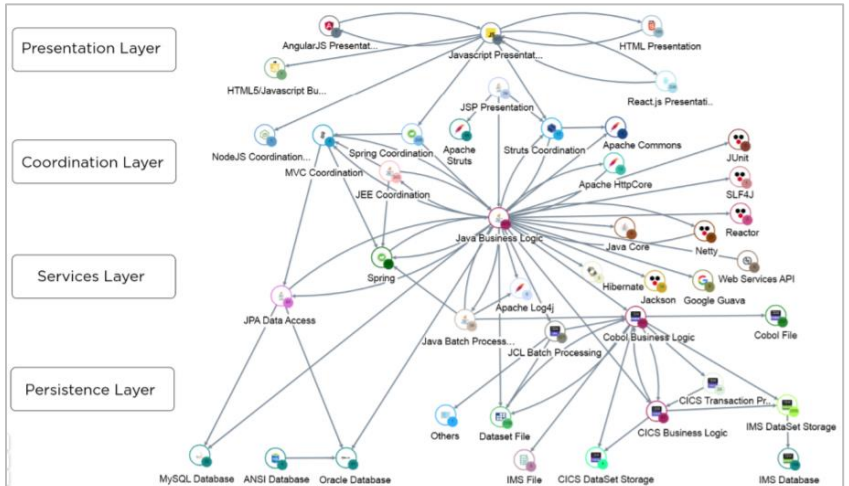
Migrate & Modernize to AWS

Assess → Mobilize → Migrate & Modernize

Optimize on AWS

Modernize Post Lift-and-Shift
Optimize Continuously





Rapid scan of a portfolio of applications

CAST Highlight

Cloud readiness and open source risk insights of 100s of applications in a week

- ✓ Automatically categorizes all applications according to Gartner 5 Rs, recommends a migration roadmap
- ✓ Identifies cloud blockers, and remediation effort estimates
- ✓ Recommends AWS services
- ✓ Identifies open-source risks: vulnerabilities, obsolescence, licensing
- ✓ And from there continuously monitors progress

aws PARTNER Migration & Modernization Software

Deep architecture discovery of one application

CAST Imaging

Architecture Insights

- ✓ Automatically discovers the architecture of a given application
- ✓ Builds interactive maps to navigate down to tiniest details: components, inter-/intra-dependencies, data graphs and more
- ✓ Speeds and secures refactoring/rearchitecting
- ✓ Acts as continuous knowledge base throughout the application life cycle

Broad technology coverage and resolution

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12+ Databases

50+ Languages

100's of Frameworks

- ✓ **Best Resolution** – only insights that matter and no one else can see
- ✓ **Highest Fidelity** – context-based analysis that no one else does
- ✓ **Broadest Range** – across all quality characteristics and technologies

IDC

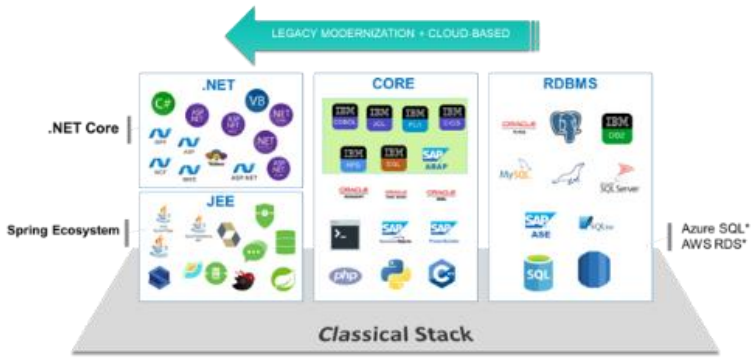
"CAST excels at architectural assessment."
Melinda Ballou, Research Director

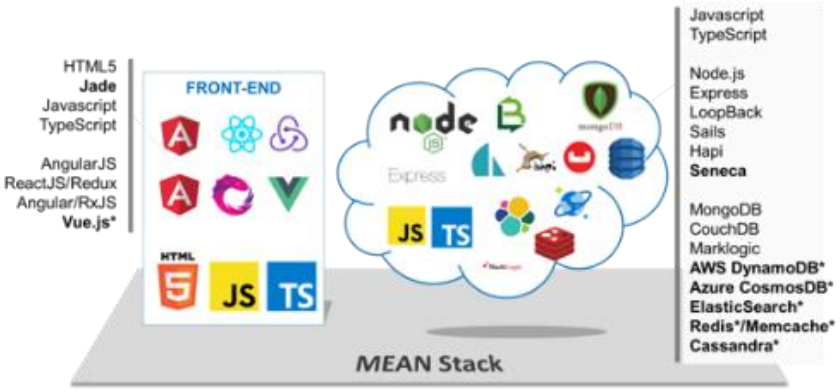
FORRESTER®

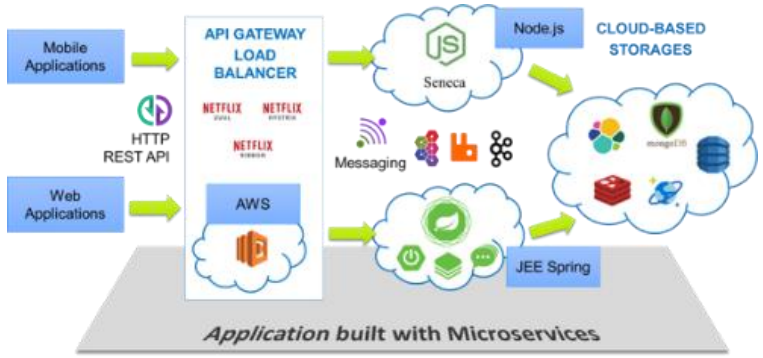
"Most accurate for application deep analysis."
Amy Demartine, Principal Analyst

Gartner

"CAST is a very sound technology that has been thoroughly vetted."
Jim Duggan, VP Research







CAST Highlight process: safe, non-intrusive, operational in hours

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1. Planning & Launch

Campaign communication to application owners

2. Application Analysis

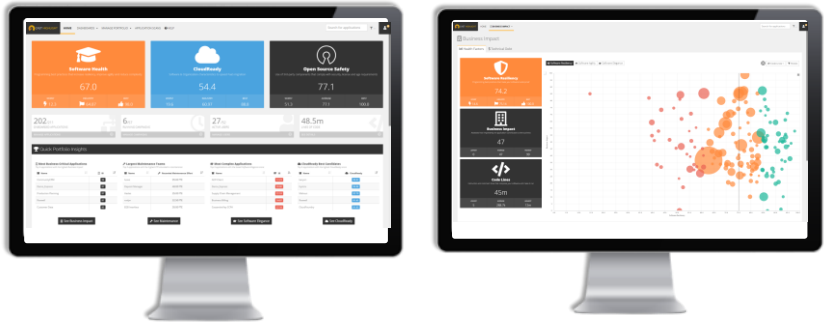
Application owners download CAST Highlight scanning agent to analyze code stacks and complete business impact application survey (optional).

Scan is performed in minutes, on customer premises.

- Source code never leaves premises
- No intrusion in production systems

3. Results Generation and Consumption

Actionable software analytics and portfolio-wide dashboards available online: cloud readiness; cloud blockers; recommended cloud services; application health; technology mix and SBOM; opensource risks



- Secured ISO 27001 certified SaaS platform

Typically 1-2 weeks for a few hundreds of applications

Demo

- Cloud Readiness Portfolio Assessment on CAST Highlight
- Application Discovery on CAST Imaging

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Monolith to microservices acceleration and deployment
Leveraging CAST Imaging and AWS Migration Hub Refactor Spaces

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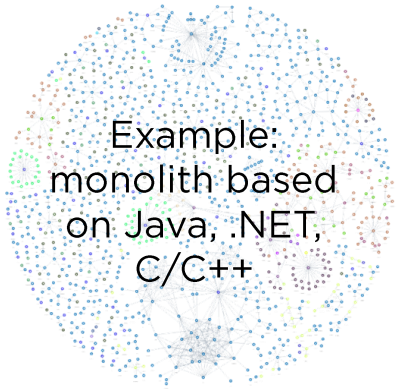
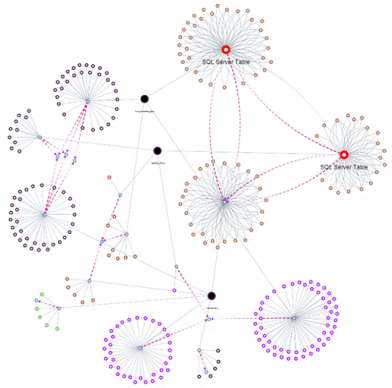
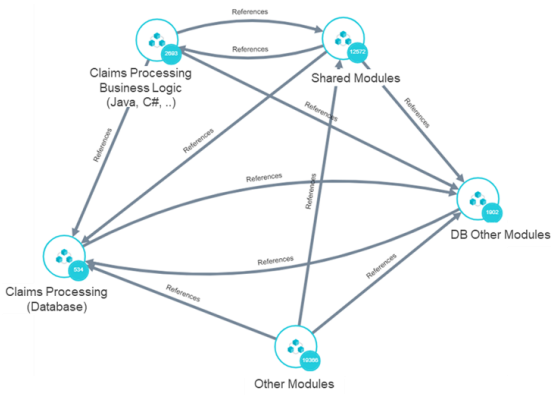






1. **Identify classes, transactions and tables** that make up the application

2. For each class and transaction, **identify methods and their callers / callees.**
Combine highly-coupled classes, transactions, tables.

3. Reiterate until reaching a **trade-off between coupling and single responsibility modules** that constitute microservices candidates

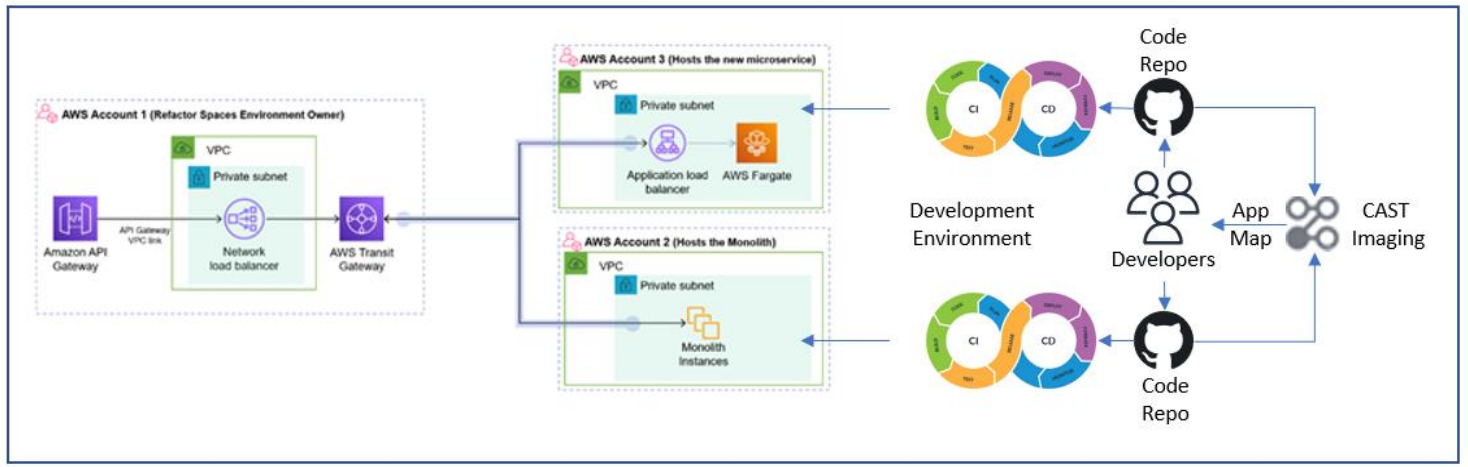
4. **Rewrite modules as RESTful microservices**, expose data through APIs using programming technologies supported by AWS Lambda, Refactor Spaces and CAST Imaging e.g. Java, C#, JavaScript/TypeScript (Node.js) and Python.

In parallel **Deploy on AWS Migration Hub Refactor Spaces**

- Deploy monolith on EC2 instances in Refactor Spaces
- Deploy microservices in AWS Fargate or AWS Lambda
- Connect CAST to CI/CD pipeline during initial monolith discovery and continuous modernization

Benefits

- **Accelerated discovery** of complex and poorly documented monoliths
- **Continuous modernization journey** where business value is realized early, with gradual deployment of new business features.
- **Low latency between monolith and new microservices** to maximize responsiveness of application throughout the modernization journey.



Production Environment under Refactor Spaces vs. CI/CD pipeline

Accelerate modernizing mainframes to AWS with CAST

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Migrate & modernize mainframe applications to AWS

Assess → Mobilize → Migrate & Modernize

- Refactor automatically with Blu Age
- Replatform with Micro Focus

Optimize on AWS

Modernize and optimize further

- Fragment monolith to macro/microservices
- Move from custom middleware to cloud-native fully-managed services
- Move data to cloud-native databases
- Modernize continuously

1. CAST for Rapid Portfolio Determination (identify few applications)

2. CAST for Comprehensive Portfolio Analysis (analyze many applications)

3. CAST for detailed architecture map to identify further modernization and optimization options

Accelerate modernizing mainframes to AWS with CAST
2. Mobilize/Comprehensive Portfolio Analysis (analyze many applications)

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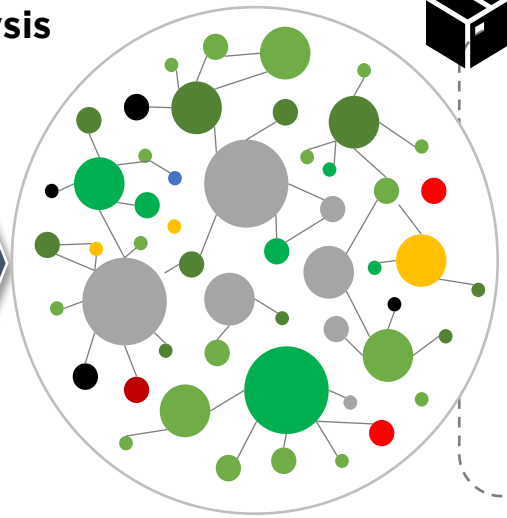
Objectives
- Delineation of applications
- Pattern guidance for all applications
- Identification of POC candidates and quick wins to move ahead

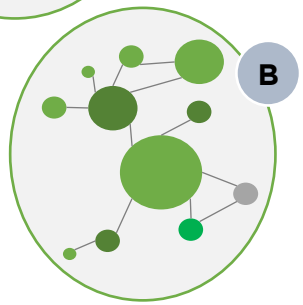
CAST Analysis

Large portfolio of applications
- Partly documented
- Technologies and dependencies partly known
- Readiness to potential modernization paths unknown

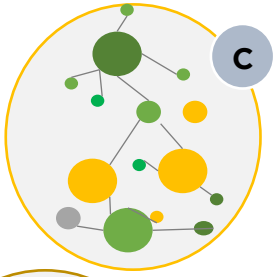


Deliverables
- Inventory of technologies
- List of cloud blockers
- List of app-to-app dependencies
- Identification of eligibility to Replatforming or Automated Refactoring (generic)
- Categorization of applications in 5 modernization patterns
- Architecture maps

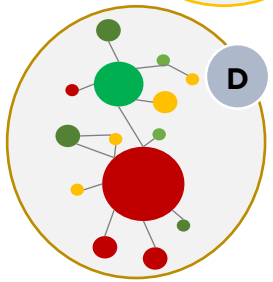
A Quick Wins
No technology blocker, low data coupling, limited program coupling with other applications → ready for immediate Replatforming or Automated Refactoring



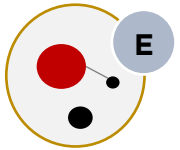
B Minor Cleanup Needed
Few technology blockers, low or medium application coupling, low or medium data coupling → minor cleanup needed, then Replatforming or Automated Refactoring



C Bigger Cleanup Needed
Technologies incompatible with Replatforming or Automated Refactoring → bigger cleanup needed (e.g. marginal rewrite), then Replatforming or Automated Refactoring



D Fragmentation Needed
System needs to be split so that some parts are eligible to Replatforming or Automated Refactoring



E Re-Engineering Required
Significant Re-Engineering or Rewrite required.

Benefits
- Migration and modernization at scale on industrial approach, accelerated by tools
- Faster identification of quick wins to focus on in a large number of applications
- Actionable insights
- Identification of a modernization path for all applications, even the most complex/least documented

Timeline
- 4-8 weeks for tens of application from the moment source code and application code components are ready to scan

Cloud Migration and Modernization at US-based global airliner

Context

Client objective is to use the crisis (pandemic) as an opportunity to be able to accelerate their move to the cloud to

- Reduce costs
- Increase resilience and to be able to
- Deliver new emerging products and services faster

IBM* leveraged CAST as an enabling technology for Cloud Migration and Application Modernization.

Solution & Approach

IBM defined 2-phase strategy:

- Strengthen understanding of Client portfolio with CAST Highlight
- Demonstrate capability to execute by building 1st increment supported by CAST Imaging.

Within two weeks with CAST Highlight Partner gained:

- Visibility of full portfolio's health, blockers for Cloud PaaS and open-source components for each application
- Increase accuracy of modernization estimation while reducing delivery risks

For core business application systems marked to be modernized into micro-services, Partner demonstrated capability to discover architecture, complexity and shared components using CAST Imaging with

- Means to understand current state (AS-IS)
- Informed modernization plan for the near- to the mid-term
- Better recommendation for 1st increment using best practices (e.g. Strangler pattern to "kill the monolith") thus showing "Quick wins"
- Decommission or replace obsolete frameworks with more robust/agile low risk technologies

Outcomes

Align waves to business priorities, which application should move to the cloud and why.

As a first wave,

- 240 apps will be migrated to the Cloud or replaced with SaaS solutions,
- 200 apps will be containerized (lighter modernization), and
- 32 core systems (90% of the costs) will be modernized to micro-services / cloud natives

Build MVP as a 1st increment.

Re-assure Client on scaling of the execution and move to off-shore.

"Application Modernization is at the center of the Digital Transformation we engaged."
- Client CIO

(*) Success story made public by IBM in Software Intelligence Forum in January 2021

Leverage CAST to accelerate your application modernization projects to AWS

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Resources

- CAST page for faster modernization to cloud
- AWS Prescriptive Guidance
  - Assess application readiness for migration to AWS using CAST Highlight
  - Analyze and visualize software architecture in CAST Imaging
- AWS Workshops
  - (new!) Portfolio Assessment on CAST Highlight
  - (launching soon!) Application Discovery on CAST Imaging
- (launching soon!) Blog post: monolith to microservices acceleration and deployment leveraging CAST Imaging and AWS Migration Hub Refactor Spaces
- On-demand training for AWS and its SI partners
- CAST on the AWS Marketplace
- CAST library of case studies

SCAN ME

Working together

- CAST holds the AWS Migration & Modernization Software Competency
- CAST works with AWS teams of Migration Services, MAP, Windows Modernization, Mainframe Modernization, ProServ
- Pilot program on-going for assessments by AWS Migration Services, for limited number of projects
- Join the CAST ecosystem of SI partners

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