

Datadog Live Seoul 2024

# 3개월 차 DevOps팀의 Datadog 활용법

이병호, 박상욱, 김경보, 김태수(NewNex) & 이성욱(Datadog)  
뉴넥스

# Speakers



이병호

DevOps



박상욱

DevOps



김경보

DevOps



김태수

Backend  
Developer

# Agenda

## 1 3개월 차 DevOps팀의 Datadog 활용법

- 모니터링 개선을 고민하게 된 계기?
  - 모니터링 고도화 과정 중 좋은 점 아쉬운 점?
  - 공유 하실만한 데이터독 사용팁?
  - 모니터링 고도화 계획
- 

## 2 Q&A

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# 뉴넥스 소개



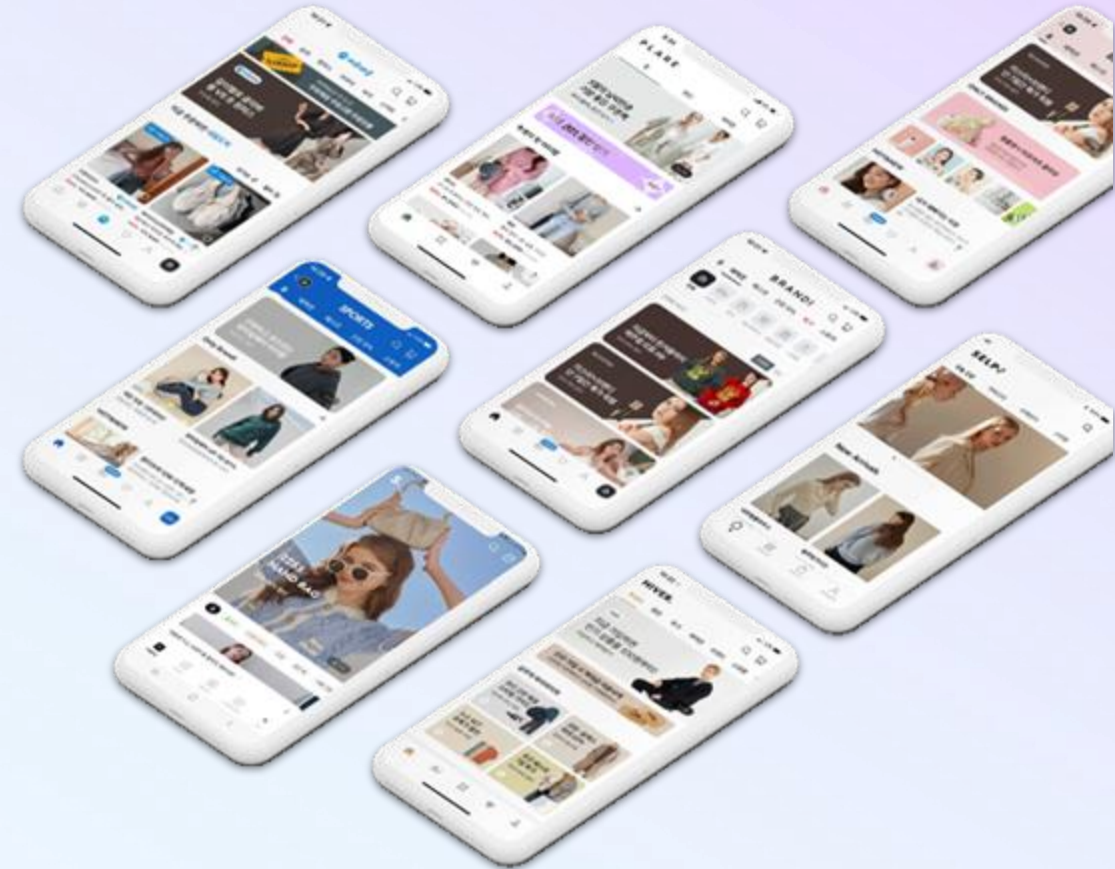
DATADOG

## (주)뉴넥스 소개

뉴넥스는,  
 고급망과 소비자를 연결하는 **‘체인 플랫폼’** 비즈니스와  
 고객에 특화된 버티컬 플랫폼을 확장하는 **‘앱스 전략’**을 통해  
**‘다음 세대의 커머스’**를 만들어 가고 있습니다.



‘배송 경쟁력’ 및 ‘서비스 품질’ 향상 → 판매자에게 ‘효과적인 매출 확대 기회’  
 고객에게는 ‘최고의 쇼핑 경험’ 제공



**BRANDI**  
 패션쇼핑앱

**HIVER.**  
 남자쇼핑앱

**S.**  
 브랜드쇼핑앱

**HELPI**  
 패션 유통앱

**SELPI**  
 동아문 패션앱



## ‘버티컬 커머스 플랫폼’과 ‘풀필먼트’를 운영하는 이커머스 스타트업



**BRANDI**  
패션소싱업



**HIVER.**  
남자소싱업



**SEOULSTORE.**  
브랜드소싱업  
브랜드 팝업 플랫폼



**HELPI**  
패션 풀필먼트



**SELPI**  
남성 전문 도매업

## (주)뉴넥스 누적 성과

누적 거래액  
**1.8조원**

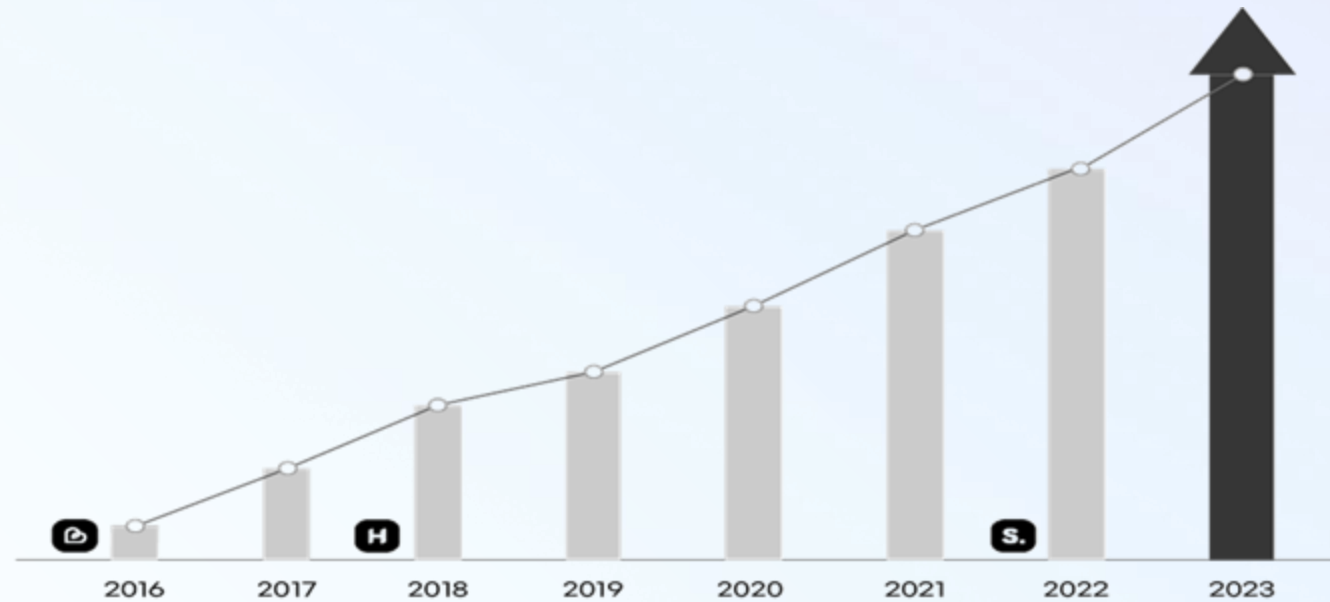
- 2024.04 기준 -

누적 투자 유치  
**1,530억원**

- 2024.04 기준 -

누적 판매자 수  
**57,800명+**

- 2024.04 기준 -



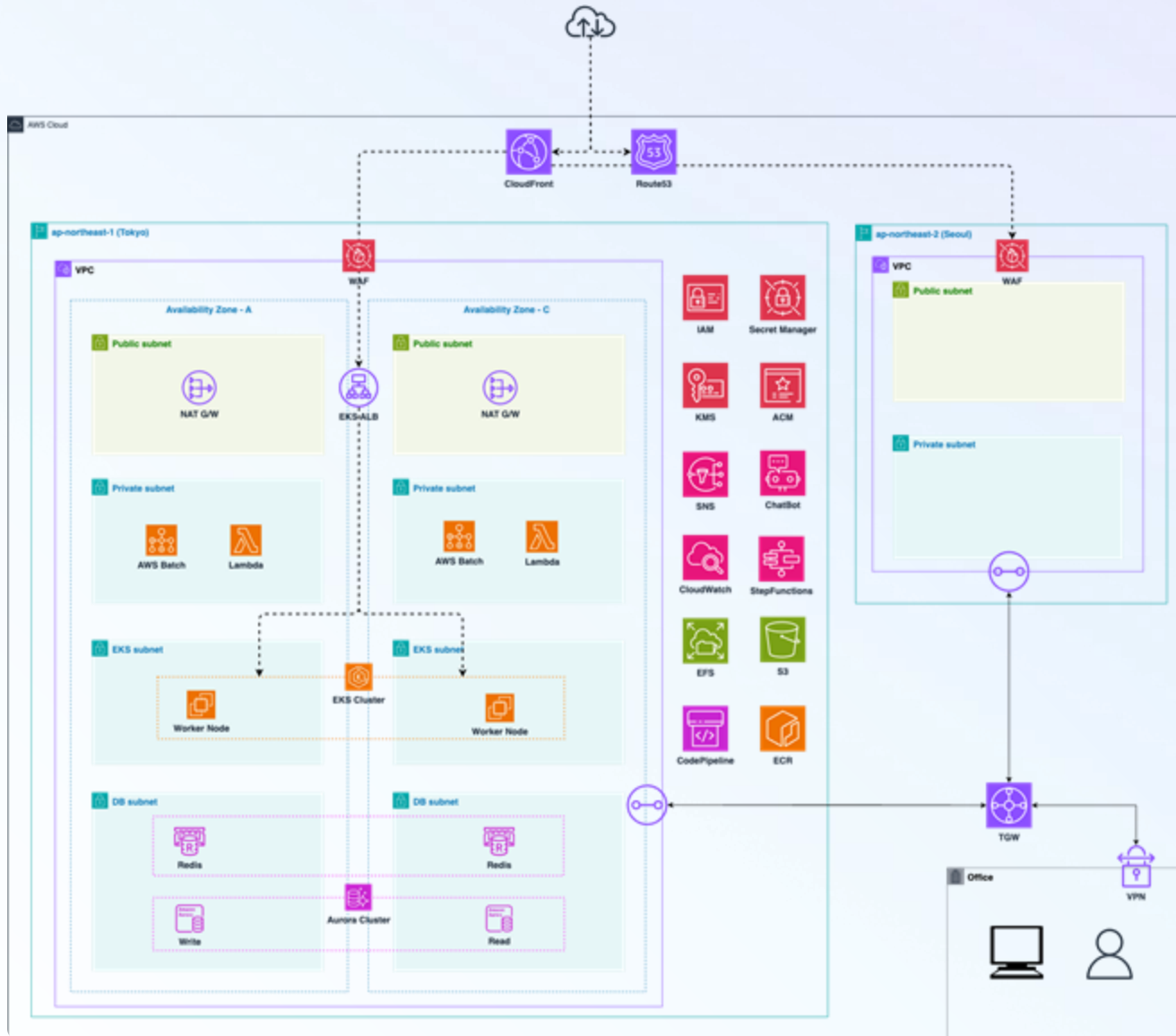
# 사용하는 기술 스택



DATADOG



# 서비스 환경



## AWS 리전 (멀티리전 사용)

- ap-northeast-1
- ap-northeast-2

## 서비스 리소스 (클라우드 네이티브 환경)

- 8개의 EKS Cluster
- 128개의 CloudFront
- 360개의 Lambda
- 5개의 Amplify

## 기타 리소스

- StepFunctions
- Batch
- MWSAA
- Redis

## Application TechStack

- Python, FastAPI
- Java, Kotlin, Spring Boot
- PHP
- REST API, gRPC

모니터링 개선을 고민하게 된 계기?



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# 입사 후 상태 점검

**비용** : 약정요금과 온디맨드요금의 혼재 (난 약정 재계약 한지 얼마 안됐는데?)

**설정** : env 구분이 없이 NONE로 표현 (어떤 pod가 PRD지?)

**로그** : Service 로그 및 Infra 로그 구분이 어려움

**개선** : 현명호 이사님의 제안으로 시작

# Pain Point (1/2)

**레거시한 환경** : 서울/도쿄리전, 다수의 EKS cluster 리소스 관리 어려움

**장애 처리의 복잡성** : 장애 난 서비스가 어느 리전, 어느 클러스터지?

**긴급 작업의 비효율성** : 비슷한 이름의 리소스가 있는데 진짜 사용하는건 어디지?

**리소스 확인 번거로움**: EKS 파드 리소스 확인의 복잡함

## Pain Point (2/2)

대시보드 미구성: 환경에 맞지 않는 메트릭 대시보드

잘못된 알림 문제: 메모리 사용량 관련 부정확한 알림

신입 직원의 편의성 개선 : 새로운 입사자도 똑같은 일을 겪어야되나?

모니터링 개선 필요성 인식: 데이터독 개선의 필요성 및 발표 기회 활용

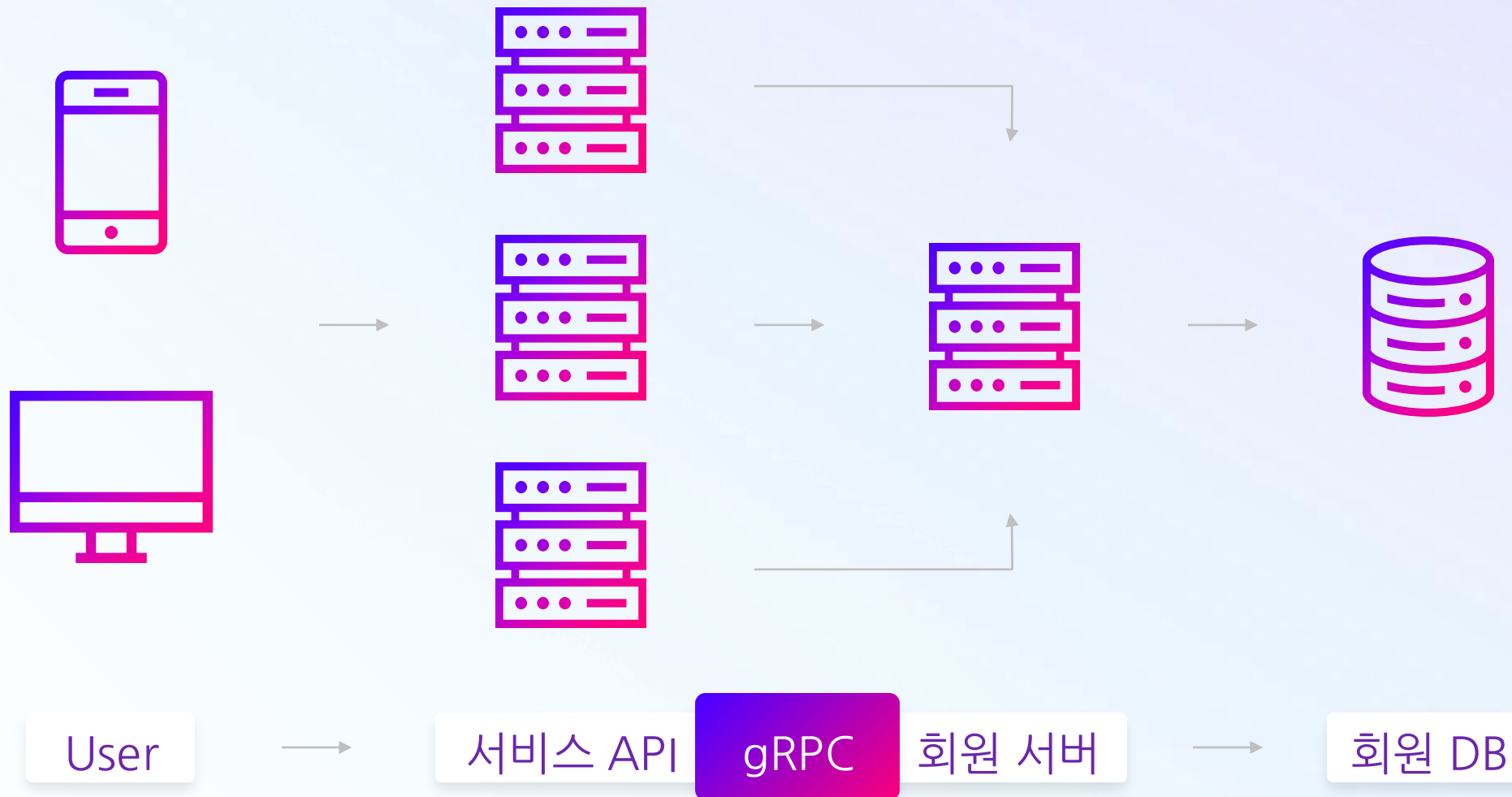
# 모니터링 고도화 과정 중 좋은 점과 아쉬운 점?



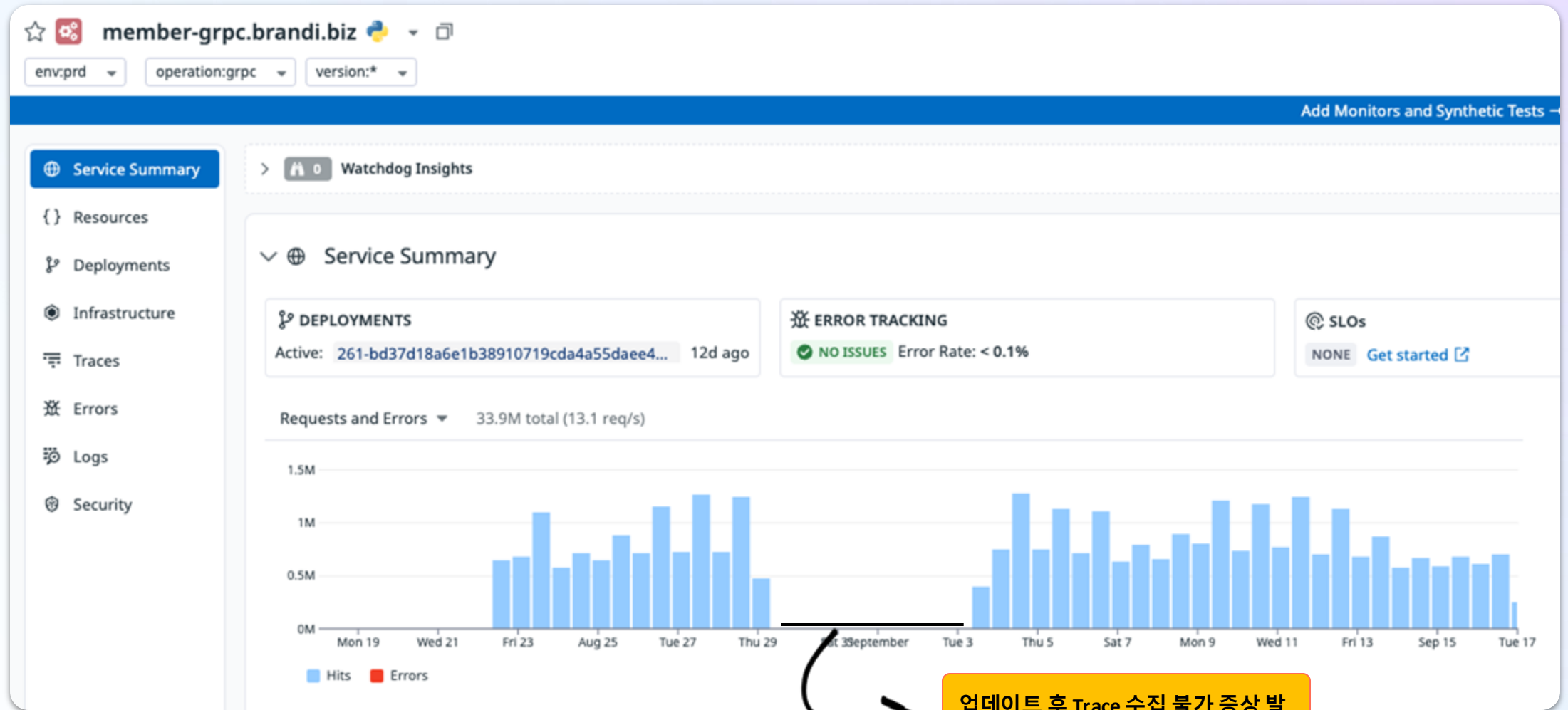
DATADOG



# 서비스 구조



# 고도화를 위한 라이브러리 업데이트 후...



# 고도화를 위한 라이브러리 업데이트 후...

## 에러화면

```
python3.10/socket.py", line 833, in create_connection
    sock.connect(sa)
ConnectionRefusedError: [Errno 111] Connection refused

The above exception was the direct cause of the following exception:

Traceback (most recent call last):
  File "/usr/local/python310/lib/python3.10/site-packages/ddtrace/internal/writer.py", line 559, in flush_queue
    self._retry_upload(self._send_payload, encoded, n_traces)
  File "/usr/local/python310/lib/python3.10/site-packages/tenacity/__init__.py", line 404, in __call__
    do = self.iter(retry_state=retry_state)
  File "/usr/local/python310/lib/python3.10/site-packages/tenacity/__init__.py", line 361, in iter
    raise retry_exc from fut.exception()
tenacity.RetryError: RetryError[<Future at 0x7f896810d030 state=finished raised ConnectionRefusedError>]
failed to send traces to Datadog Agent at http://172.31.82.185:8126/v0.4/traces
Traceback (most recent call last):
  File "/usr/local/python310/lib/python3.10/site-packages/tenacity/__init__.py", line 407, in __call__
    result = fn(*args, **kwargs)
  File "/usr/local/python310/lib/python3.10/site-packages/ddtrace/internal/writer.py", line 446, in _send_payload
    response = self._put(payload, headers)
  File "/usr/local/python310/lib/python3.10/site-packages/ddtrace/internal/writer.py", line 398, in _put
    self._conn.request("PUT", self._endpoint, data, headers)
  File "/usr/local/python310/lib/python3.10/http/client.py", line 1282, in request
    self._send_request(method, url, body, headers, encode_chunked)
  File "/usr/local/python310/lib/python3.10/http/client.py", line 1328, in _send_request
    self.endheaders(body, encode_chunked=encode_chunked)
  File "/usr/local/python310/lib/python3.10/http/client.py", line 1277, in endheaders
    self._send_output(message_body, encode_chunked=encode_chunked)
  File "/usr/local/python310/lib/python3.10/http/client.py", line 1037, in _send_output
    self.send(msg)
  File "/usr/local/python310/lib/python3.10/http/client.py", line 975, in send
    self.connect()
  File "/usr/local/python310/lib/python3.10/http/client.py", line 941, in connect
    self.sock = self._create_connection()
  File "/usr/local/python310/lib/python3.10/socket.py", line 845, in create_connection
    raise err
  File "/usr/local/python310/lib/python3.10/socket.py", line 833, in create_connection
    sock.connect(sa)
ConnectionRefusedError: [Errno 111] Connection refused

The above exception was the direct cause of the following exception:
```

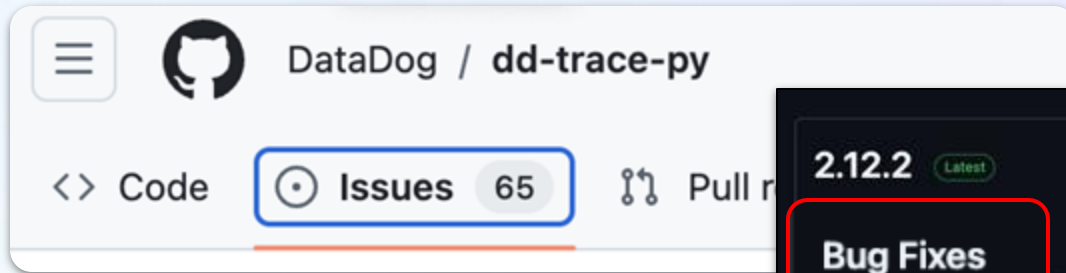
## 2.1.2 버전

```
dependencies = [
    "attrs>=20",
    "bytecode; python_version>='3.8'",
    "bytecode~0.13.0; python_version=='3.7'",
    "catrs",
    "ddsketch>=2.0.1",
    "envier",
    "importlib_metadata; python_
    "opentelemetry-api>=1",
    "psutil~5.8",
    "protobuf>=3",
    "setuptools; python_version
    "six>=1.12.0",
    "typing_extensions",
    "wrapt~1.15",
    "xmldict>=0.12",
]
```

## 2.11.1 버전

```
dependencies = [
    "bytecode>=0.15.0; python_version>='3.12'",
    "bytecode>=0.14.0; python_version~='3.11.0'",
    "bytecode>=0.13.0; python_version<'3.11'",
    "envier~0.5",
    "importlib_metadata<=6.5.0; python_version<'3.8'",
    "opentelemetry-api>=1",
    "protobuf>=3",
    "typing_extensions",
    "xmldict>=0.12",
]
```

# 고도화를 위한 라이브러리 업데이트 후...



2.12.2 Latest

**Bug Fixes**

- `attrs` is an issue where the version of `attrs` installed by default on some Ubuntu installations was treated as incompatible with library injection
- Code Security: This fixes a bug in the IAST patching process where `AttributeError` exceptions were being caught, interfering with the proper application cycle.

▼ Assets 2

- Source code (zip) 5 days ago
- Source code (tar.gz) 5 days ago

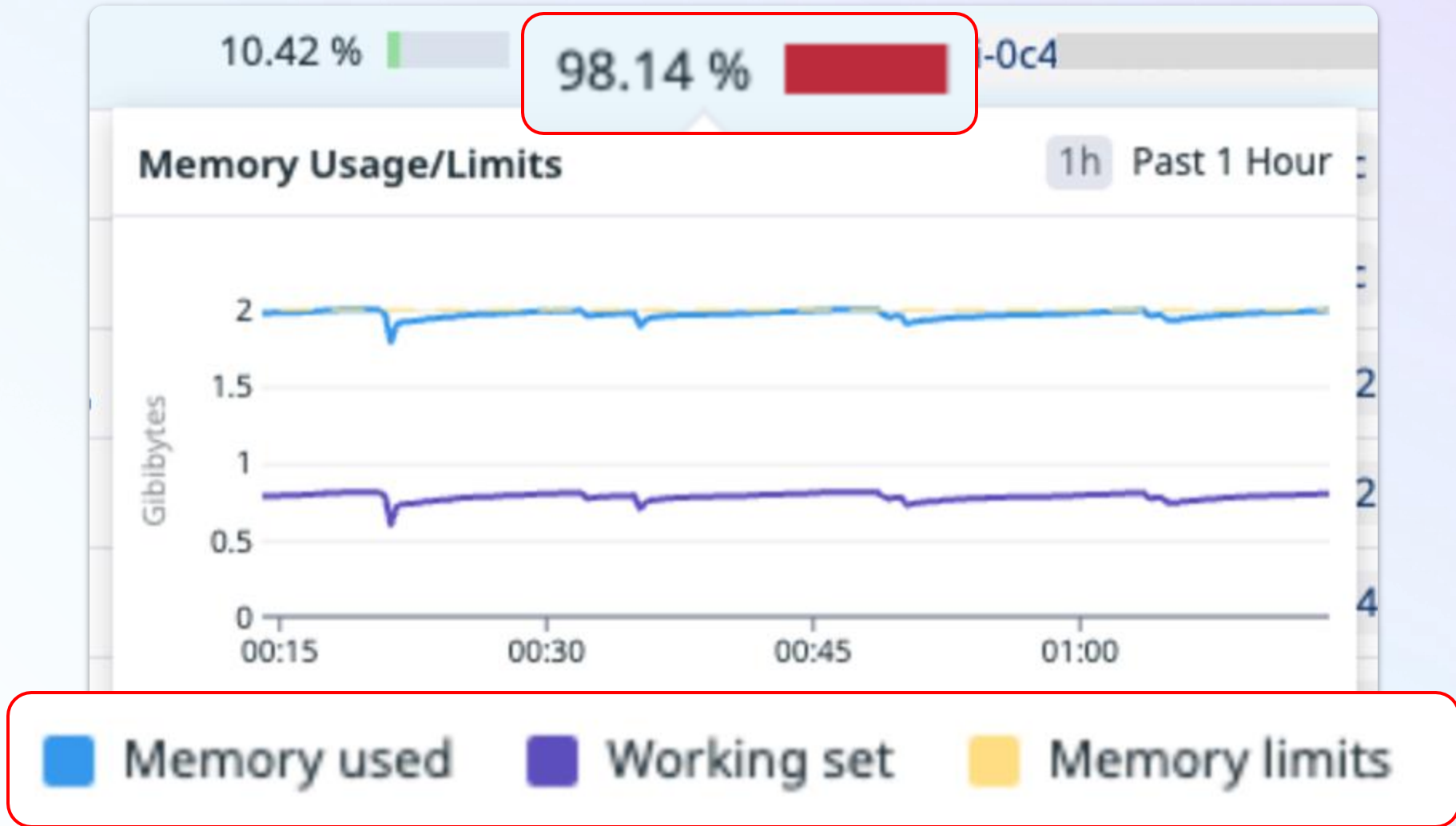
2.11.6

**Bug Fixes**

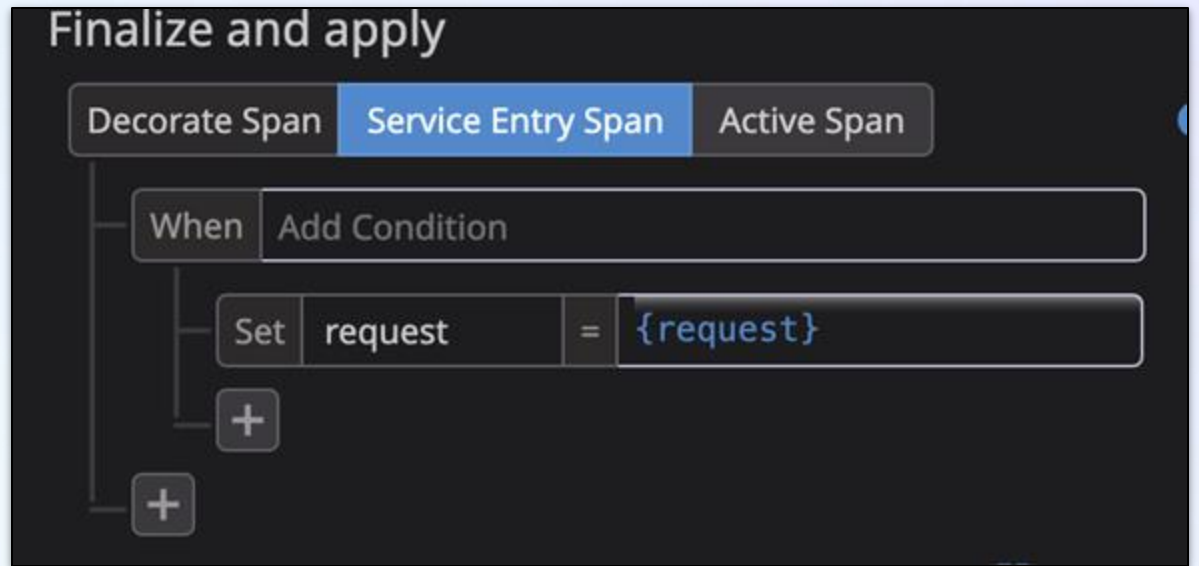
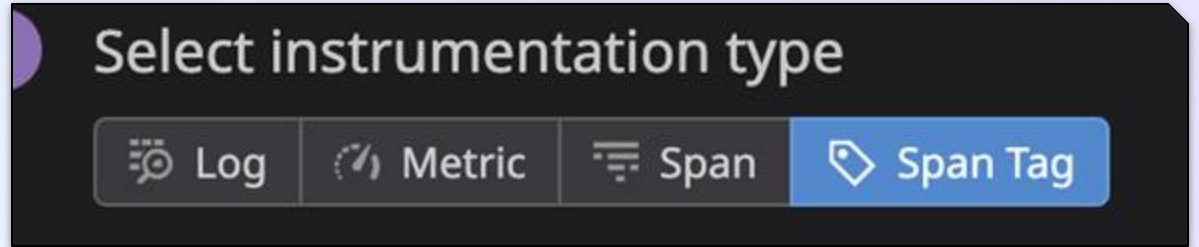
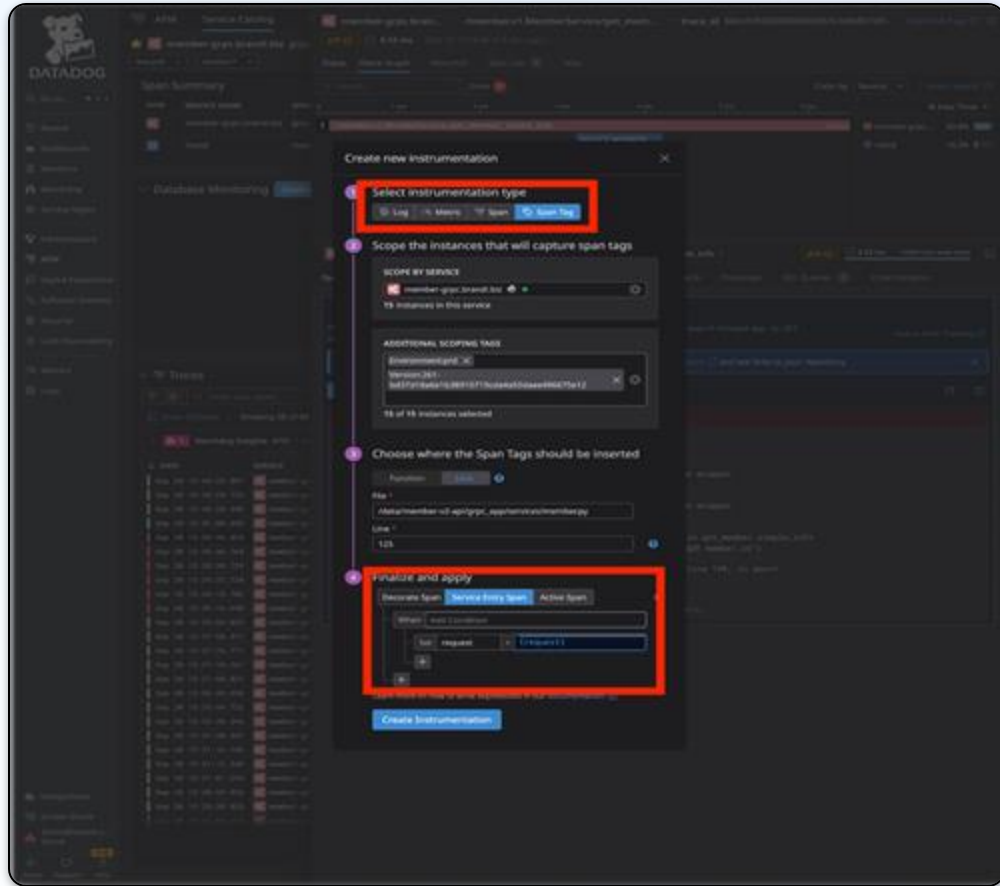
- library injection: Resolves an issue where the version of `attrs` installed by default on some Ubuntu installations was treated as incompatible with library injection
- Code Security: This fixes a bug in the IAST patching process where `AttributeError` exceptions were being caught, interfering with the proper application cycle.

▶ Assets 2

# 그외 다양한 Feature 고도화 문의



# Dynamic Instrumentation을 통한 분석 고도화





# Dynamic Instrumentation을 통한 분석 고도화

The screenshot displays the Datadog APM interface for a gRPC service. The main view shows a trace for the endpoint `/member.v1.MemberService/get_member_info`. A span is highlighted with a red bar, indicating an error. Below the trace, the 'Span Tags' section shows dynamic tags. A callout box with a red border highlights the request payload: `request { 'member_no': '██████████' }`. The interface also shows a table of related spans and a detailed view of the selected span's metadata and logs.

# Profiler를 통한 코드 고도화 및 비용 최적화

The screenshot displays the Datadog Profiler interface. On the left, there's a navigation menu with categories like Infrastructure, AFM, Digital Experience, Security, LLM Observability, Metrics, Logs, VM Ops, and Wall Time. The main area shows a code snippet for the method `AwsHelper.getItem(String, String, AttributeValue)` from `kcqa.brandi.admin.helper`. The code includes a `.build()` call and a `val res: QueryResponse?` declaration. A callout box highlights line 214, stating it is the most impactful in the method. Below the code, it shows the average CPU time for this method is 50ms (4.64% of profile). On the right, a list of methods is shown, including `__pthread_disable_asynccancel()`, `Parker::park()`, `JfrStorage::write()`, `MarkSweep::adjust_marks()`, `Unsafe_Park()`, `_int_malloc()`, `PhaseChain::interfere_with_live()`, `Method::line_number_from_bci()`, `InstanceClass::method_id_or_null()`, `pthread_cond_signal@GLIBC_2.3.2()`, `PhaseChain::Split()`, `MarkSweep::restore_marks()`, `InstanceClass::get_method_id()`, `__memcpy_avx_unaligned_erms()`, `StatsDProcessor$ProcessingTask.process...`, `StatsDNonBlockingProcessor$ProcessingT...`, `PhaseChain::build_ifg_physical()`, `java_lang_Thread::interrupted()`, `StatsDSender.sendLoop()`, `Method::method_id()`, `PhaseDeallop::build_loop_late()`, `Buffer::remaining()`, `PhaseChain::gather_lrg_masks()`, `java_lang_Thread::sleep()`, `__memset_avx2_erms()`, `__libc_disable_asynccancel()`, `__condvar_dec_grefs()`, `LinkedList$List::trhasNext()`, `os::PlatformEvent::park()`, `__pthread_cond_wait()`, `pthread_mutex_unlock()`, `java_lang_Thread::set_thread_status()`, `Pattern$CharPropertyGreedy.match(Mat...`, `__pthread_mutex_lock()`, `Interpreter()`, and `CompiledMethod::cleanup_inline_caches_L...`.

Code snippet:

```
AwsHelper.getItem(String, String, AttributeValue)
kcqa.brandi.admin.helper

Disable source code preview by pressing the Option key.

209     .tableName(tableName)
210     .keyConditions(keyConditionMap)
211     .build()
212
213     // Dynamo DB 조회
214     val res: QueryResponse? =
215
216
217
218
219
Line 214 is the most impactful in this method, group by line to see 1 other contributing line.
Average CPU Time: 50ms (4.64% of profile)
```

Callout text:

코드 실행 후 실제 CPU/Memory를 과도하게 사용하는 Method를 간단히 발견 및 최적화 진행

# 모니터링의 통합

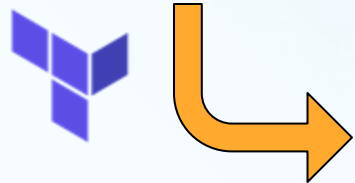


APM, 모니터링의 통합



# 서비스 정보 연동

```
1 schema-version: v2.2
2 dd-service: sprint-selpi-api.brandi.biz
3 team: commerce
4 application: brandi
5 tier: high
6 description: Service Catalog for sprint-selpi-api.brandi.biz
7 lifecycle: development
8 contacts:
9   - name: Support Email
10     type: email
11     contact: kints@brandi.co.kr
12   - name: Support Slack
13     type: slack
14     contact: https://app.slack.com/client/...
15 links:
16   - name: Service Information
17     type: doc
18     provider: "{{ link.provider }}"
19     url: https://www.notion.so/...
20   - name: Source Code
21     type: repo
22     provider: "{{ link.provider }}"
23     url: https://...
24   - name: Helm Repository
25     type: repo
26     provider: "{{ link.provider }}"
27     url: https://...
28 tags:
29   - business-unit:commerce
30 type: web
31 languages:
32   - python
```



☆ **sprint-selpi-api.brandi.biz**

Service Catalog for sprint-selpi-api.brandi.biz

Service Page ✕

Ownership Reliability Performance Security Costs Delivery **NEW**

**Service Metadata** Schema version: v2.2 Metadata source:

[Edit](#) [Create a Jira ticket](#)

<b>TEAM</b> commerce	<b>APPLICATION</b> brandi	<b>LIFECYCLE</b> development	<b>TIER</b> high
<b>ON-CALL</b> Datadog <a href="#">Manage</a> kimts@brandi.co....	<b>CODE REPOSITORIES</b> <a href="#">Source Code</a> <a href="#">Helm Repository</a>	<b>DOCUMENTATION</b> <a href="#">Service Information</a>	<b>LINKS</b> Not Provided
<b>CONTACTS</b> <a href="#">Support Slack</a> <a href="#">Support Email</a>	<b>CUSTOM TAGS</b> business-unit:commerce	<b>RUNBOOKS</b> Not Provided	

# 모니터링 개선방향 파악

**Overall Service Score** Passing 6 of 10 total rules across 3 Categories **60%**

---

▼ **Observability Best Practices** Passing 1 of 2 rules **50%**

SCORE	RULE
PASSING	Deployment tracking is
FAILING	Logs correlation is activ

▼ **Ownership & Documentation** Passing 4 of 4 rules **100%**

SCORE	RULE	LAST UPDATED	ACTIONS
PASSING	Code Repos Defined	6m ago	<a href="#">Edit Metadata</a>
PASSING	Contacts Defined		
PASSING	Docs Defined		
PASSING	Team Defined		

▼ **Production Readiness** Passing 1 of 4 rules **25%**

SCORE	RULE	LAST UPDATED	ACTIONS
PASSING	Deployed in the past 3 months	6m ago	<a href="#">View Recent Deployments</a>
FAILING	Monitors Defined	6m ago	<a href="#">+ New Monitor</a>
FAILING	On-call Defined	6m ago	<a href="#">Edit Metadata</a>
FAILING	SLOs Defined	6m ago	<a href="#">+ New SLO</a>

# Datadog 사용팁?



DATADOG



# Datadog 사용 팁!

```
# clusterAgent.containerExclude — Exclude containers from the Cluster Agent
# Autodiscovery, as a space-separated list. (Requires Agent/Cluster Agent 7.50.0+)

## ref: https://docs.datadoghq.com/agent/guide/autodiscovery-management/?tab=containerizedagent#exclude-containers
containerExclude: # "image:datadog/agent"

# clusterAgent.containerInclude — Include containers in the Cluster Agent Autodiscovery,
# as a space-separated list. If a container matches an include rule, it's
# always included in the Autodiscovery. (Requires Agent/Cluster Agent 7.50.0+)

## ref: https://docs.datadoghq.com/agent/guide/autodiscovery-management/?tab=containerizedagent#include-containers
containerIncludes:

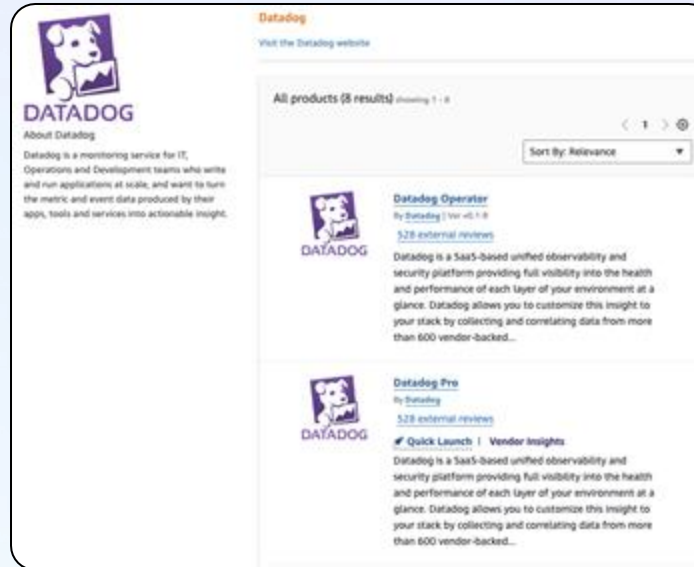
## This section lets you configure the agents deployed by this chart to connect to a Cluster Agent
## deployed independently
existingClusterAgent:
  # existingClusterAgent.join — set this to true if you want the agents deployed by this chart to
  # connect to a Cluster Agent deployed independently
  join: false

  # existingClusterAgent.tokenSecretName — Existing secret name to use for external Cluster Agent token
  tokenSecretName: # <EXISTING_DCA_SECRET_NAME>

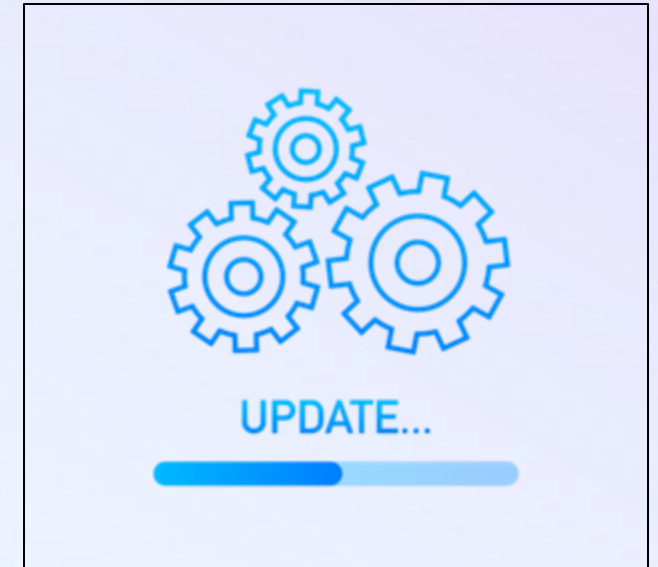
  # existingClusterAgent.serviceName — Existing service name to use for reaching the external Cluster Agent
  serviceName: # <EXISTING_DCA_SERVICE_NAME>

  # existingClusterAgent.clusterchecksEnabled — set this to false if you don't want the agents to run the
  clusterchecksEnabled: true
```

간편한 설정



간편한 비용관리



⚠ 업데이트 주의 ⚠

# 이후 모니터링 고도화 계획



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# 장애 관리

← #14 >

RESOLVED Today at 12:58:08 오전

HIGH URGENCY

DevOps - [kubernetes] Pod Terminated 발생

Declare Incident

Info Description Timeline

ESCALATION POLICY

DevOps - Default Escalation Policy >

OVERVIEW

Team DevOps >

Assignee 경보 김 >

TRIGGERING SOURCE

DevOps - [kubernetes] Pod Terminated 발생

Query alert

ALERT 19m ago

← #14 >

RESOLVED Today at 12:58:08 오전

HIGH URGENCY

DevOps - [kubernetes] Pod Terminated 발생


Declare Incident

Info Description Timeline

@oncall-devops @slack-Brandi\_Inc-ad-pod-alert brandi-ad-product-prod-eks의 hiver-ad-cms-backend-spend-completed-worker-59668d5c8f-rrdjk 파드 Terminated 발생!!

- cluster\_name - brandi-ad-product-prod-eks
- pod - hiver-ad-cms-backend-spend-completed-worker-59668d5c8f-rrdjk
- namespaces - hiver-ad-cms-backend

● @slack-labs-devops-metric-alarm



← #14 >

RESOLVED Today at 12:58:08 오전

HIGH URGENCY

DevOps - [kubernetes] Pod Terminated 발생

Declare Incident

Info Description Timeline

9월 23, 2024

- 01:08 오전 RESOLVED by On-Call (automatic)
- 01:03 오전 Notified 경보 김
- 01:03 오전 Escalated to 경보 김 by On-Call (automatic)
- 00:58 오전 Notified 상욱 박
- 00:58 오전 TRIGGERED by Monitor #146926147

# 고도화 - OnCall

On-Call Summary Teams Pages Schedules Escalation Policies Analytics My On-Call Profile

Search...

All Schedules Hide Controls Showing 1-3 of 3 Schedule + New Schedule

My Schedules Today < > September 18 - September 24, 2024 View in Asia/Seoul (UTC+09:00)

Export My Shifts My Teams

**DevOps - Secondary**  
Currently on call: 상목 박 Team: DevOps Escalation Policy: DevOps - Default Escalation Policy

Wednesday 18	Thursday 19	Friday 20	Saturday 21	Sunday 22	Monday 23	Tuesday 24
	상목 박	경보 김			병호 이	

**commerce - Primary**  
Currently on call: 태수 김 Team: commerce Escalation Policy: commerce - Default Escalation Policy

Wednesday 18	Thursday 19	Friday 20	Saturday 21	Sunday 22	Monday 23	Tuesday 24
		태수 김				

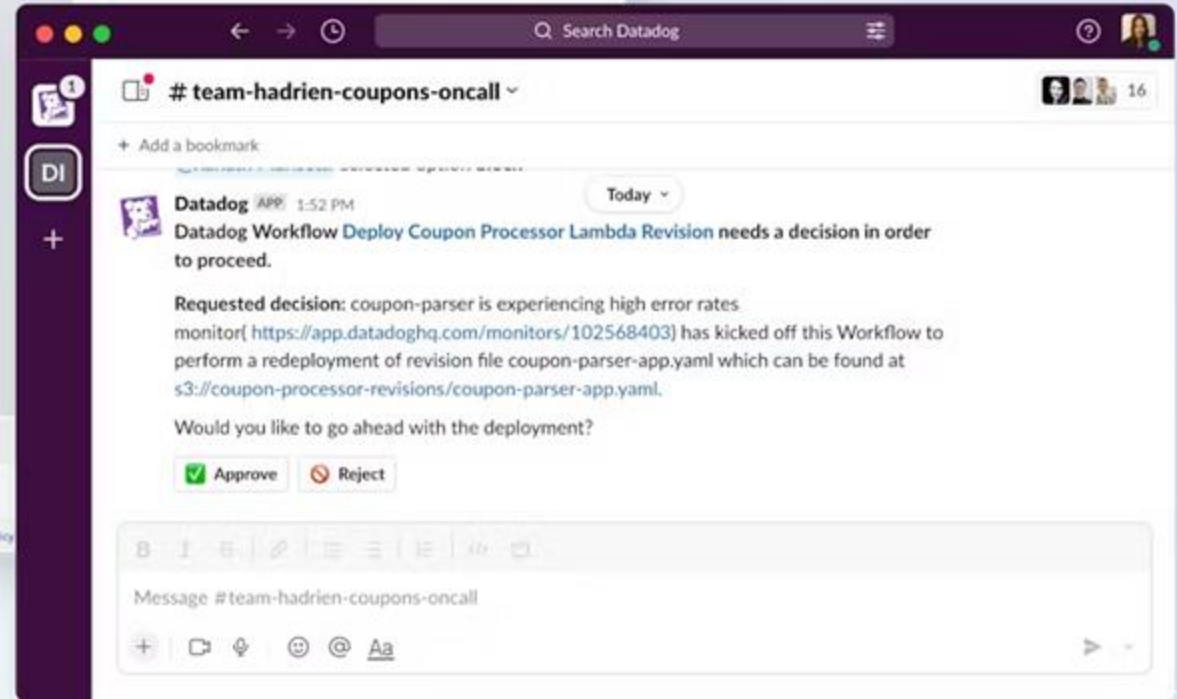
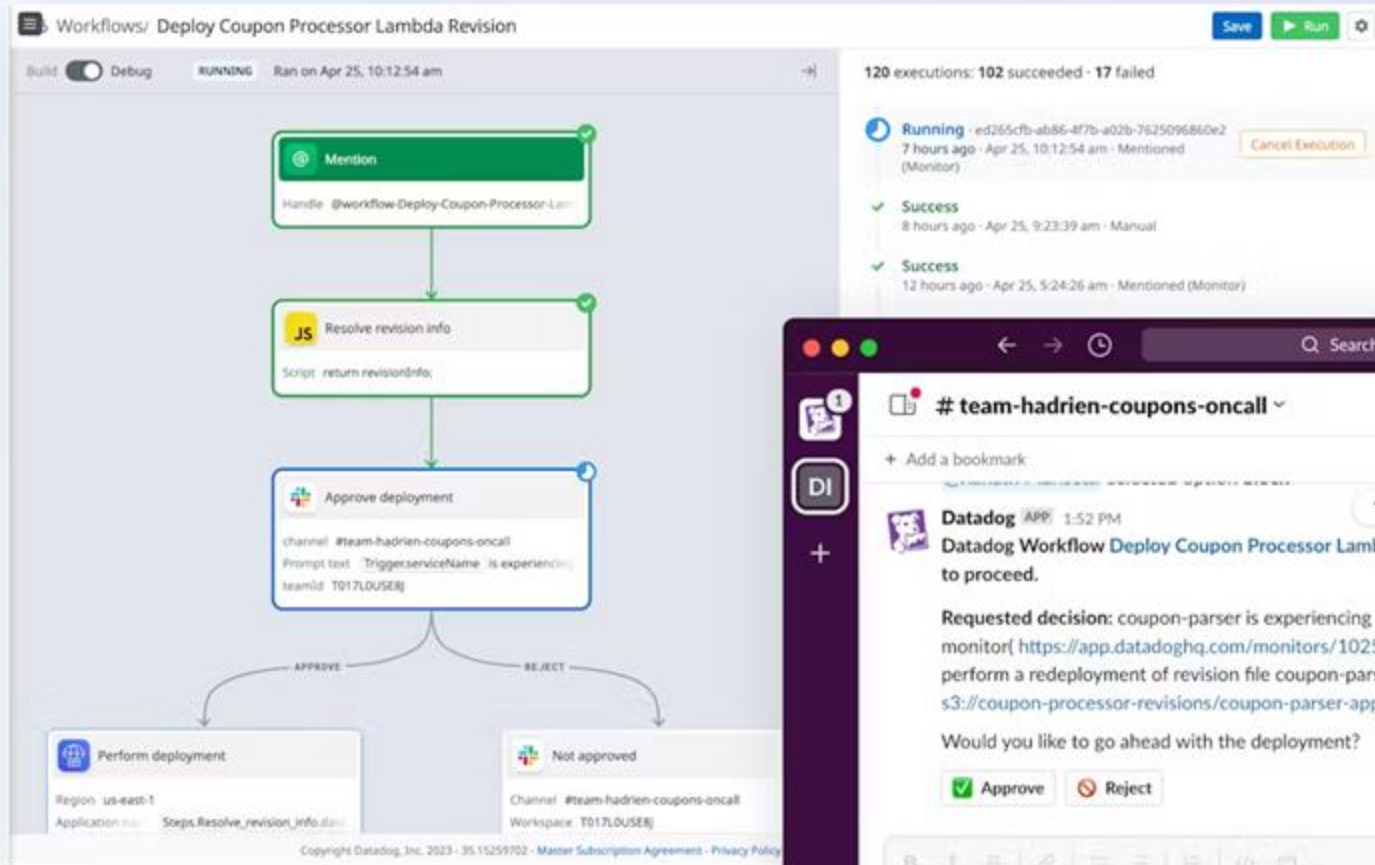
**DevOps - Primary**  
Currently on call: 병호 이 Team: DevOps Escalation Policy: DevOps - Default Escalation Policy

Wednesday 18	Thursday 19	Friday 20	Saturday 21	Sunday 22	Monday 23	Tuesday 24
	병호 이	상목 박			경보 김	

RESPONDERS	DATE
상목 박	2 hours ago ⌚ 10 min 0 s
상목 박	14 hours ago ⌚ 7 min 11 s
상목 박	1 day ago ⌚ 10 min 0 s
상목 박	2 days ago ⌚ 10 min 0 s
경보 김	7 days ago ⌚ 10 min 0 s
경보 김	7 days ago ⌚ 10 min 0 s
상목 박	Sep 11, 3:40 pm ⌚ 5 min 36 s
태수 김	Sep 11, 1:33 pm ⌚ 18 s

<input checked="" type="checkbox"/> devops	10	HIGH	RESOLVED	DevOps - [kubernetes] Pod Terminated 발생
<input checked="" type="checkbox"/> commerce	1			#7   DevOps   kube_cluster_name:brandi-ad-product-prod-eks +3
<input type="checkbox"/> Service		HIGH	RESOLVED	DevOps - [kubernetes] Pod Terminated 발생
<input checked="" type="checkbox"/> member.brandi.biz	1			#6   DevOps   kube_cluster_name:brandi-ad-product-prod-eks +3
<input type="checkbox"/> Responder Name		HIGH	RESOLVED	DevOps - [kubernetes] Pod Terminated 발생
<input checked="" type="checkbox"/> 상목 박	7			#5   DevOps   kube_cluster_name:brandi-ad-product-prod-eks +3
<input checked="" type="checkbox"/> 경보 김	2	HIGH	RESOLVED	[TEST] member p95 지연시간이 높습니다.
<input checked="" type="checkbox"/> 병호 이	1			#4   commerce   member.brandi.biz   env:prd +3

# 고도화 - Workflow



# Summary



DATADOG



BEFORE

## 3개월 전

서비스 가시성 - Env : none

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비용 최적화 - Profiler : 60 / 로그  
1TB

---

장애 처리의 어려움

AFTER

## 현재

태그 및 연계 분석 설정 완료

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Profiler : 39 / 컨테이너 로그  
500GB / 소스코드 최적화

---

On-call 및 운영 대시보드 개선을 통한  
장애처리 고도화

# Q&A

감사합니다!



DATADOG