

How Asian Development Bank (ADB) Drives Mass Adoption of a Single Observability Platform

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Introduction

Nobody likes being told they must learn and use a new tool or do things differently—no matter how good the tool is or how great the new practice is. In a large enterprise IT environment, we need to come up with creative tactics to drive adoption of new tools and practices. That's what we've done at the Asian Development Bank (ADB) to drive DevOps collaboration, implement Datadog as a unified observability platform, and eliminate legacy monitoring tools.

We decided to make monitoring and observability fun through gamification and healthy competition. We also layered in lightweight governance and created spotlight success stories to demonstrate the value of the new platform and motivate adoption. In short, we employed much more of a “pull” than a “push” motion; or, to put it another way, we used more carrot than stick. In this article, I describe the practices we put in place (and other organizations can put in place) to break down silos between systems and teams and instill a culture of observability.

The Business Imperative

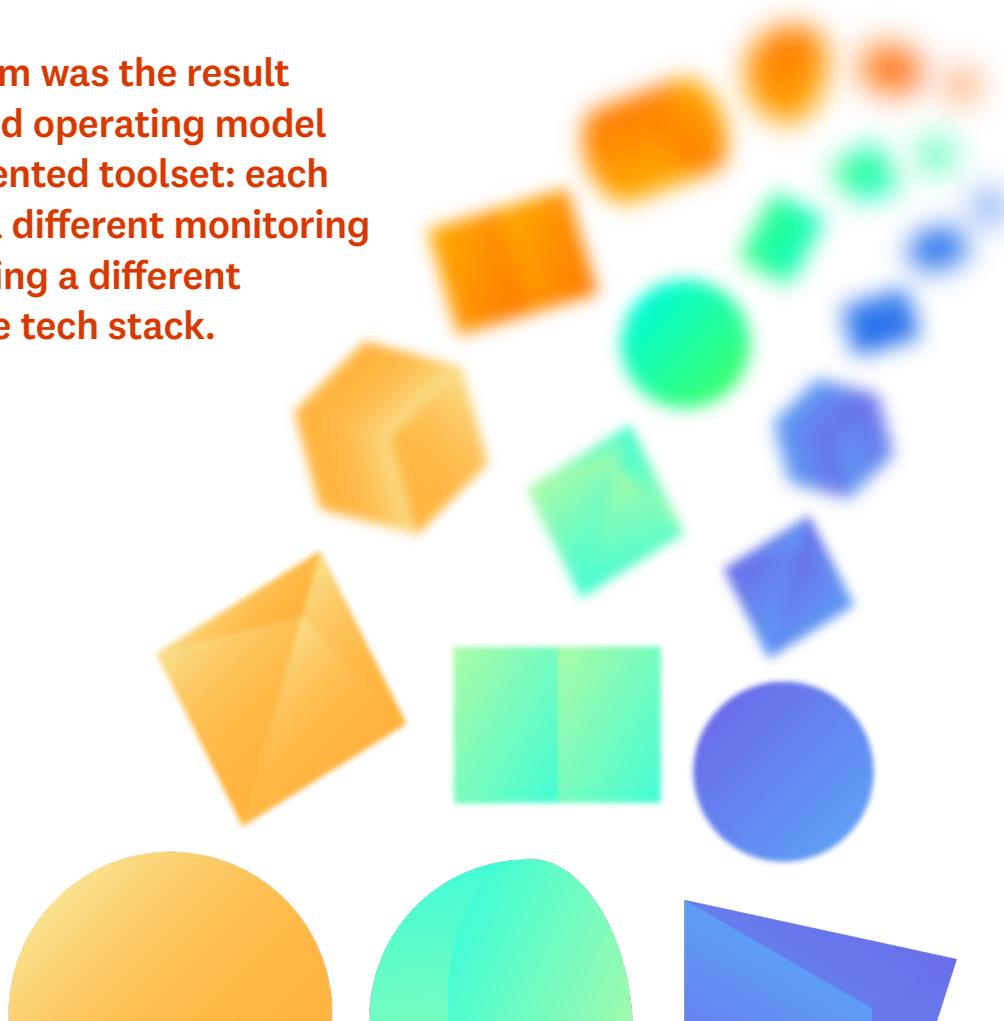
Before getting into the details of our observability initiative, let me provide a bit of context on what we were looking to change.

Like many large enterprises, ADB operates a number of legacy, highly customized systems. As a result, we were experiencing a common problem: our 6,000 business users had become our primary monitoring and alerting system. We'd frequently receive helpdesk tickets from business users telling us their applications were having issues before we in IT knew anything was wrong. As an IT organization, we needed to break this pattern: we needed to find a way to proactively monitor our systems and prevent issues before they became service-impacting. And when service-impacting issues do occur, we need to be the first to know, and resolve them quickly.

The problem was the result of our siloed operating model and fragmented toolset: each team had a different monitoring tool, covering a different piece of the tech stack.

The problem was the result of our siloed operating model and fragmented toolset: each team had a different monitoring tool, covering a different piece of the tech stack. The database team had a tool, the Windows team had a tool, the network team had a tool—in all, we had about a dozen production monitoring tools. Each tool was monitored by a specific team on behalf of all of IT. The teams, the tools, and the monitoring data were disconnected. So, when a problem occurred, teams would email each other and have to piece together the problem, which resulted in delays and frustration.

The tactics I describe below have helped us evolve our operating model to be much more collaborative and effective as a large IT organization.

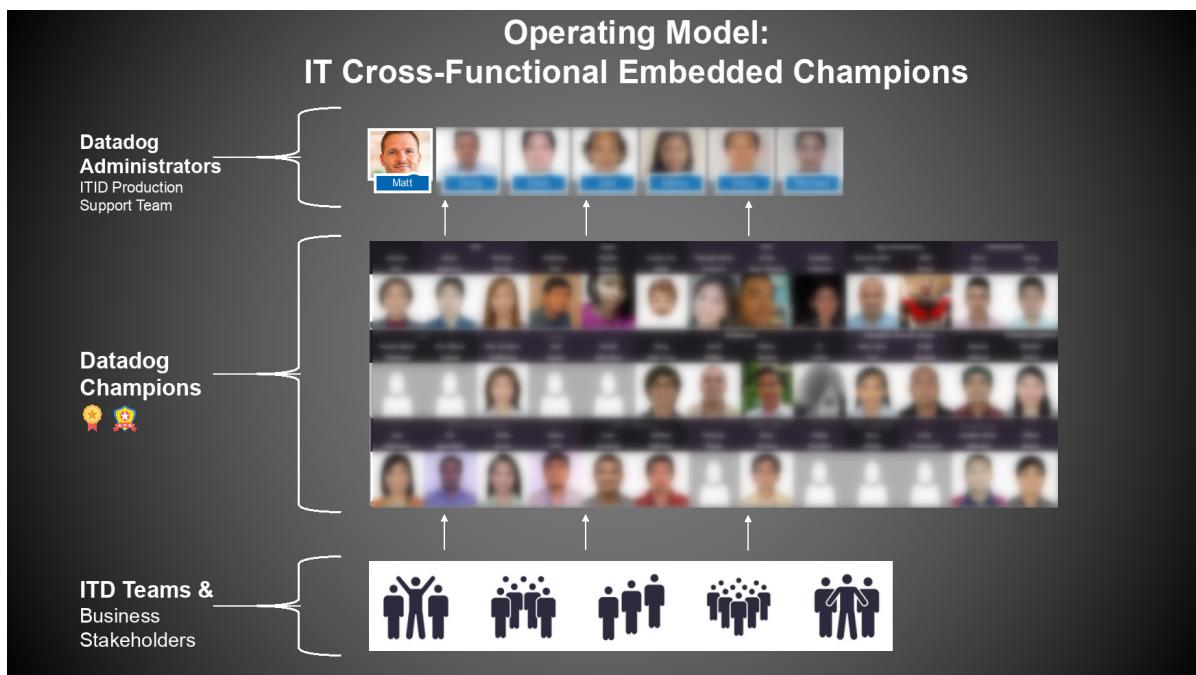


Cross-Functional Embedded Champions Program

The Production Support Team (my team) are the Datadog administrators. But given that the production support team is only seven people (with pre-existing responsibilities), we needed to create champions within each team in the IT department to fully implement Datadog. The IT department at ADB is broken into large groups—software development, infrastructure, database, emerging technologies, projects, etc. Within those groups, we identified sixteen teams that we needed to onboard.

We invited each team to nominate 2-3 people to become Datadog SMEs. We asked teams to nominate a few people knowing that likely only one or two would complete the program and become a certified Champion. In turn, Champions are embedded in each team and are expected to lead that team's Datadog implementation and be that team's first line of support for Datadog. Issues can then be escalated to the Production Support team as a second line of support.

An internal "Datadog Champions" program where each of the many teams has a nominated Datadog SME.

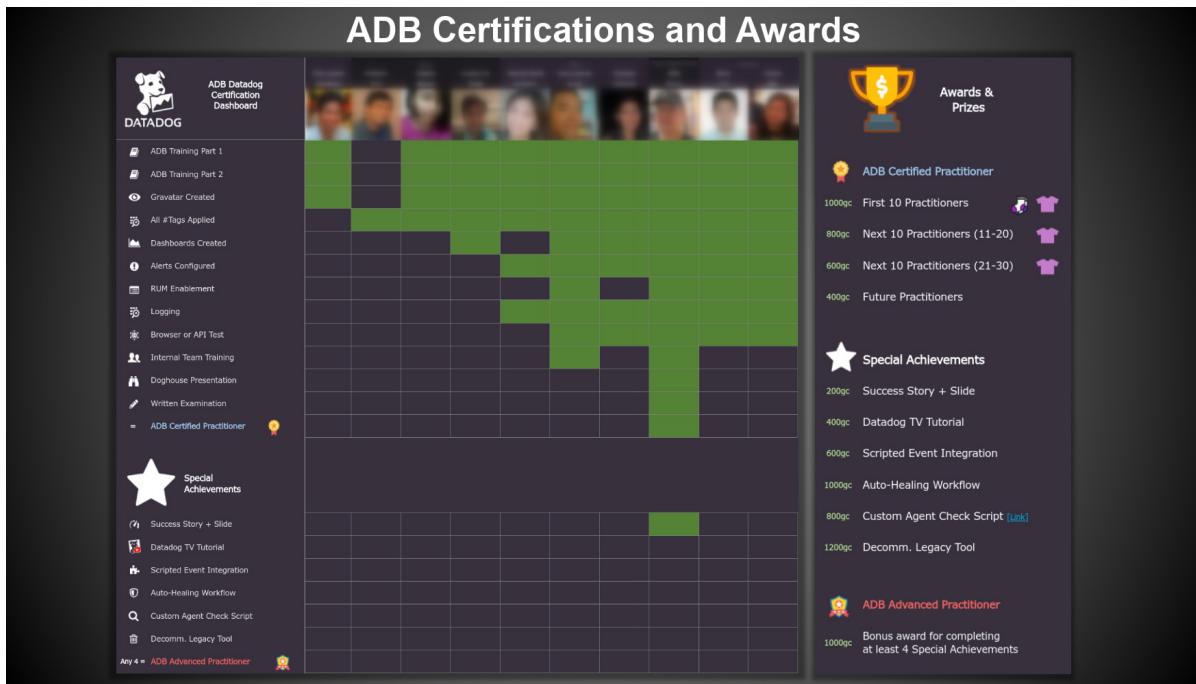


Gamified Monitoring Training and Implementation

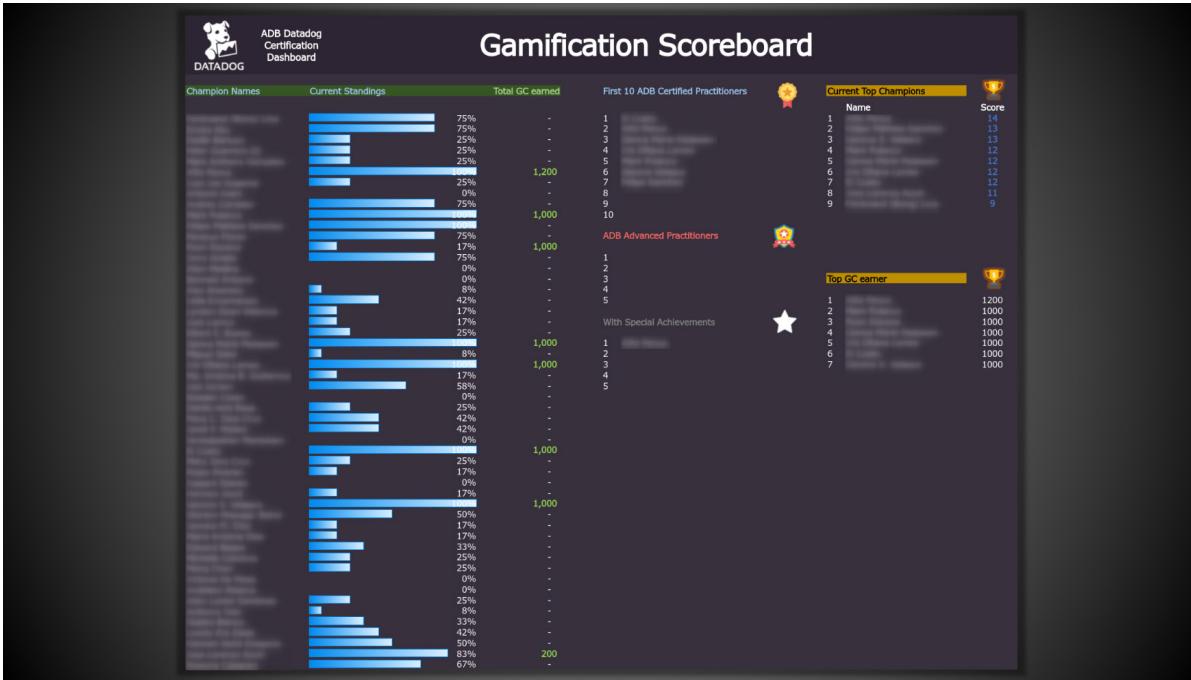
We instituted a formal Champion certification process. As our Champions complete milestones by deploying and managing monitoring features and functionality, they also earn gift certificates and vendor swag as a reward. We have a

leaderboard that tracks everyone's progress on a public dashboard. In all, we have more than 50 champions in the program working towards formal certification.

We track Champions' progress toward certification on a public dashboard.



The Champions work in a "gamified" program to unlock achievements and earn gift cards as they implement Datadog features.



Certificate of Completion

The Champions Program culminates in a written exam consisting of 25 multiple choice questions administered by the Production Support team. Those who pass get a certificate (shown below)

and a gift card. The first ten certified practitioners received special recognition and awards, which created healthy competition and helped us jumpstart the rollout.

We made our own "ADB Datadog Certified Practitioner" award with associated proctored examination.

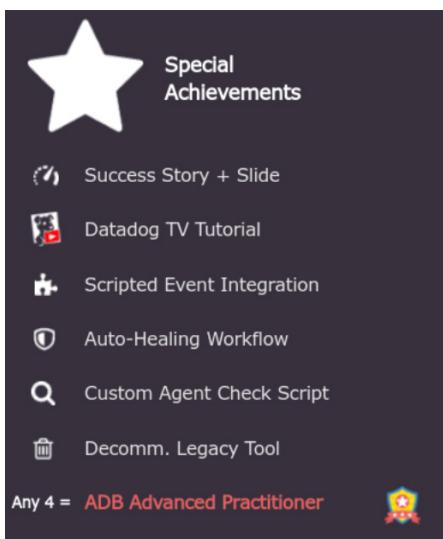


Special Achievements to become an Advanced Practitioner

Once Champions become Certified Practitioners, they have the opportunity to become designated an ADB Advanced Practitioner if they complete four activities that we call "Special Achievements."

Naturally, we incentivize and gamify becoming an Advanced Practitioner as well.

Completing any four Special Achievements qualifies Certified Practitioners to become Advanced Practitioners.



Monthly Community of Practice (CoP) Meeting

Once a month we have a Community of Practice (CoP) meeting for Datadog Champions.

The goals of this meeting are to:

- Facilitate cross-pollination of ideas, use cases, and innovation
- Increase the knowledge and competency of Datadog Champions
- Maximize the value and business benefits of Datadog

The meeting usually has a packed agenda that includes items such as:

- Tips & Tricks Knowledge Sharing
- Updates on new Datadog features
- Deep dives on a specific topic
- A team sharing an innovative use case they implemented or success story
- Aspiring Champions present what they have implemented in Datadog for their team (this is a requirement for earning their Practitioner Certification)
- Round table Q&A session

We record CoP meetings and post them to our resource channels, which I describe below.

August CoP Agenda

- What's New?
 - Vendor [Release Notes](#)
 - Dash 2020 Conference [Announcements](#)
- Leaderboard / Dashboard [Review](#)
 - New Certified Practitioners
 - New Achievements Unlocked
- Special Announcements
- [REDACTED] (Windows) Presentation
- [REDACTED] (eOps/PRS) Presentation

The Datadog House
Community of Practice

Champion Resources

We've developed a bevy of resources and documentation for our Champions. We find that branding and high production quality boost

engagement and demonstrate the seriousness of the initiative.

CUSTOMIZED ADB DATADOG HOMEPAGE

Within Datadog, we have a homepage where we have quick links to information and resources.

These resources emphasize the Community of Champions model and encourage self-service.

ADB Datadog Homepage ▾

Select a Datadog feature from the left-hand navigation or click an image below:

- ADB Datadog TV Stream**
- New Datadog Features**
- Product Documentation**
- User Bandwidth Monitoring**
- Champions Dashboard**
- Champion Onboarding**
- Neighborhood Watch**
- MS Teams ADB Doghouse**
- Success Stories Showcase**
- Frequently Asked Questions**

Servers

883

Containers

101

Application Monitors

62

Network Devices

7

Copyright Datadog, Inc. 2020 - 35.2927189 - Master Subscription Agreement - Privacy Policy - Cookie Policy - Datadog Status → All Systems Operational

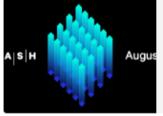
THE DATADOG HOUSE - MICROSOFT TEAMS GROUP

Similar to our Community of Practice, we refer to our Microsoft Teams group as “The Datadog House.” We have almost two dozen channels on

various Datadog features and functionality, plus our own unique use cases and governance.

The screenshot shows the Microsoft Teams interface with the 'General' channel selected. The left sidebar lists various teams, and the main pane shows a post from Matt Farley about DASH 2020. Below it is another post from Matt Farley about a Servicedesk Meeting Update. The Teams sidebar also includes links for Activity, Chat, Calendar, and Apps.

General

Matt Farley 8/5 9:22 AM
IMPORTANT!
(Free) Datadog Virtual Conference Registration
The Datadog House - Just a reminder to everyone that you only have a couple more days to register for Datadog's free online conference DASH 2020, starting Aug 11. This is normally an "in-person" conference that requires an expensive ticket, however it's free and online this time.
See more
 Dash 2020 | Attend
Dash is a one-day virtual conference all about building and scaling the next generation of...
www.dashcon.io

4 replies from you, [REDACTED], and [REDACTED]
↳ Reply

August 11, 2020

has added [REDACTED] and 2 others to the team.
August 12, 2020

Matt Farley 8/12 9:26 AM Edited
Servicedesk Meeting Update
New Champions
See more
↳ Reply

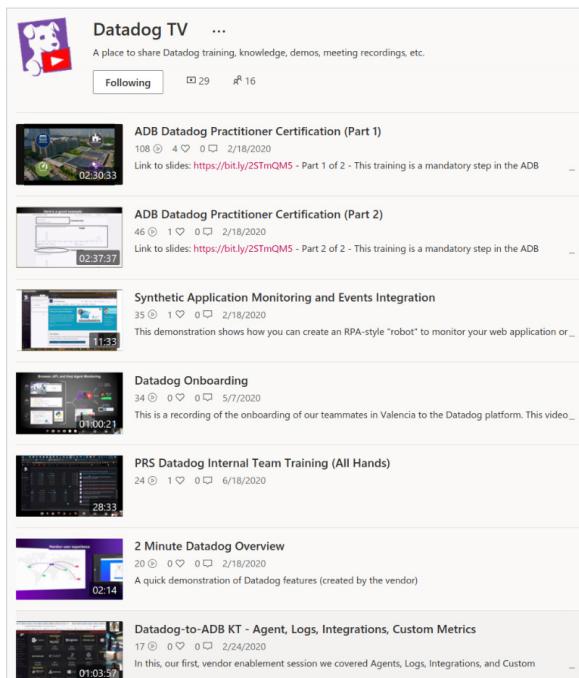
Matt Farley 8/12 10:21 AM
The Datadog House - I've taken last night's keynote from DASH 2020 (Datadog's yearly global conference) and edited a version that only

Start a new conversation. Type @ to mention someone.

Join or create a team

DATADOG TV

"Datadog TV" is our own internal YouTube-like TV channel hosted by Microsoft Stream. In this channel we publish video tutorials, informational guides, and meeting recordings. Below is a snapshot of our title sequence shot. We have theme music and a closing sequence as well.



With just a small amount of video editing knowledge and effort, we can create videos that look reasonably professional while adding a level of polish that users have come to expect from online streaming platforms.

Datadog TV – Many New Episodes!



Governance

The Champions Program is a fun, voluntary way to encourage Datadog adoption. In other words, it is a “carrot.” Because the Production Support team is small, we can only provide a certain level of support, guidance, tools, and training.

Project Vaccination

At ADB, we have a robust Project Management Office (PMO) that ensures projects have met certain criteria before they can go live. One of them is a “Security License to Operate (SLTO),” which includes validation of ADB’s security requirements to ensure a solution is ready for production. Nothing goes live without its SLTO. We liked that concept and came up with a list of things that must be done in Datadog for a project to go live. Just as every dog needs its vaccinations to protect it from disease, every

We created "Datadog Vaccinations" that are requirements for any solution going into production.

ADB Project Vaccinations			Project Name
Name	Designation	Name	Designation
Insert Picture	Insert Picture	Insert Picture	
<hr/>			
<ul style="list-style-type: none"> Project Team has been trained on Datadog (2-Part Series on Datadog TV) Designated Apps BAU Champion All #Tags Applied to Project Components Product Dashboards Created Alerts Configured Browser and API Tests Implemented Logging Real User Monitoring (RUM) - [if applicable] Future BAU Team Trained on Project Datadog Creations / Components APM + Service Maps Implemented Scripted Event Integration - If applicable Auto-Healing Workflow - If applicable Doghouse Presentation - If applicable Prod Support Review & Approval CAB Approval = Vaccination Complete 			

So, we also needed to put in place some “sticks”—lightweight governance mechanisms—to ensure that Champions are implementing Datadog according to standards. Below I describe a couple of governance practices we put in place.

project should be vaccinated with a battery of Datadog monitoring features to protect against performance problems.

My team worked with the PMO to incorporate the vaccination list into their official requirements. So, now, when a project goes before the Change Approval Board (CAB), the CAB will formally check their vaccination chart to ensure that anything going live has been properly configured for Datadog monitoring and alerting.

We created "Datadog Vaccinations" that are requirements for any solution going into production.

ADB Project Vaccinations		"Project COVID" Vaccinations
	DATADOG	
Project Team has been trained on Datadog (2-Part Series on Datadog TV)		15-Mar-20
Designated Apps BAU Champion		30-Mar-20
All #Tags Applied to Project Components		1-Apr-20
Product Dashboards Created		02-Apr-20
Alerts Configured		04-Mar-20
Browser and API Tests Implemented		04-Mar-20
Logging		04-Mar-20
Real User Monitoring (RUM) - [if applicable]		04-Mar-20
Future BAU Team Trained on Project Datadog Creations / Components		04-Apr-20
APM + Service Maps Implemented		04-May-20
Scripted Event Integration - If applicable		04-Jun-20
Auto-Healing Workflow - If applicable		04-Jul-20
Prod Support Review & Approval		
CAB Approval		
= Vaccination Complete		

Example Only

Our new project vaccination requirement announcement.

NOTICE: New CAB Requirement

DATADOG VACCINATION

...ensures that anything going live has been properly configured for Datadog monitoring and alerting

WHAT'S EXPECTED FROM YOU?
For new Projects/IT Solutions...

- Going live May to July?**
 - Nothing mandated at CAB
 - "Best effort" adoption
- Going live August to December?**
 - Identify project and BAU champions
 - Begin KT / training, Datadog TV
- Going live 2021+?**
 - All solutions should be fully vaccinated
 - Strict validation at CAB

SaaS-based monitoring and analytics platform for large-scale applications and infrastructure. Combining real-time metrics from servers, containers, databases, and applications with end-to-end tracing, Datadog delivers actionable alerts and powerful visualizations to provide full-stack observability.

Governance Coordinator

We have one person on the Production Support Team who takes the lead coordinating the Champions Program and coaching the Champions. He also checks the work of the Champions on the Datadog platform and identifies violations of our governance policies while coaching the associated Champions through the remediation process.

We developed governance policies on how we do things in Datadog, such as naming conventions. For example, we don't want a bunch of APM services named randomly. Below is a snapshot of our naming governance documentation. And, for any entity monitored in Datadog—whether it's a

For any entity monitored in Datadog—whether it's a server or service—we have six key tags that users must apply: environment, criticality, availability-zone, team, system, and role.

server or service—we have six key tags that users must apply: environment, criticality, availability-zone, team, system, and role.

We carefully document naming and tagging conventions and we enforce these standards.

The screenshot shows a Microsoft Teams interface. On the left, there's a sidebar with various team categories like General, Agent, Alerts and Monitors, etc. A red box highlights the 'Governance' category under 'Events Feed'. At the top right, there's a navigation bar with 'Governance', 'Posts', 'Files', and a dropdown for 'Governance Wiki'. Another red box highlights the 'Governance Wiki' dropdown. The main content area is titled 'Governance' and 'Naming Conventions'. It contains a bulleted list of guidelines for naming conventions, such as 'Dashboard Names', 'Dashboard Lists', 'Free Form Text Titles w/ Spaces', 'Free Form Text Titles w/o Spaces', and 'Container Names'.

This screenshot shows a Microsoft Teams interface with a governance document and a table. The governance document is titled 'Governance' and 'Naming Conventions', listing guidelines for naming conventions. Below it is a table comparing 'CURRENT DATADOG APM SVC NAME' with 'PROPOSED DD NAME CHANGE' and 'DD TAGS'. Several rows in the 'DD TAGS' column are highlighted with red boxes. The table has three columns: 'CURRENT DATADOG APM SVC NAME', 'PROPOSED DD NAME CHANGE', and 'DD TAGS'. The rows show various service names being renamed and their corresponding tags. The governance document continues below the table, providing more details on APM Service Names, good examples, and bad examples.

CURRENT DATADOG APM SVC NAME	PROPOSED DD NAME CHANGE	DD TAGS
common-uat-is1	hip-common-is	env:uat system:hip system:hip-common-is team:hip
fin-uat-is2	hip-fin	env:uat system:hip system:hip-is team:hip
hip-common-prod-is1	hip-common-is	env:prod system:hip system:hip-is team:hip
hip-fin-prod-bpm1	hip-fin-bpm	env:prod system:hip system:hip-fin-bpm team:hip
hip-fin-prod-bpm2	hip-fin-bpm	env:prod system:hip system:hip-fin-bpm team:hip
hip-sp-prod-is1	hip-sp-is	env:prod system:hip system:hip-sharepoint-is team:hip
hip-sp-prod-is2	hip-sp-is	env:prod system:hip system:hip-sharepoint-is team:hip
ids-sit-is1	ids-is	env:sit system:hip system:hip-ids-is team:hip
ids-sit-is2	ids-is	env:sit system:hip system:hip-ids-is team:hip
ids-uat-is7	ids-is	env:uat system:hip sys
ids-uat-is8	ids-is	env:uat system:hip sys
sp-adapter-uat-is7	hip-spadapter	env:uat system:hip sys
sp-uat-is1	hip-sp	env:uat system:hip sys
sp-uat-is3	hip-sp	env:uat system:hip sys

Governance
Last edited: 6/11

Naming Conventions

- APM Service Names
 - These names cannot have spaces and should be short and concise, with proper tagging
 - The names of the APM services should also be descriptive of the application
 - Bad examples:
 - prod-lpdtezh1
 - cmsserver
 - wm1
 - erpdevcms
 - Good examples:
 - jira-db tags = system:jira env:dev
 - myaccess-webserver tags = system:myaccess env:prod
 - myaccess-database tags = system:myaccess env:prod
 - class tags = system:class env:prod

Success Stories Documentation

We actively document and highlight success stories to (1) show Champions the art of the possible and (2) demonstrate the value of our unified monitoring initiative to executive stakeholders. We have a success story slide

template (shown below), which identifies the Champions, the challenge, the solution, and the results. Importantly, we also try to quantitatively estimate the business benefit.

We capture "Datadog Success Stories" and associated business benefits in a standard format and showcase.

Benefits Estimate	
XXL	\$20,000 > and up
XL	\$10,000 - \$20,000
L	\$5,000 - \$10,000
M	\$1,000 - \$5,000
S	\$100 - \$1,000

INFORMATION TECHNOLOGY DEPARTMENT
Extreme Teamwork

Below, I'll highlight two success stories that we're particularly proud of.

Neighborhood Watch

I mentioned above that business users were too often the first to alert us to technical problems. In order to reverse that dynamic, we've created synthetic checks on much of our application portfolio (currently around 20% coverage and growing). Now we have an army of thousands of synthetic "robots" constantly checking for problems and notifying us immediately. We've already been alerted to numerous issues and have been able to correct the problems before business users noticed. This initiative, which we call "Neighborhood Watch," has also cut down on testing fire drills: instead of manually testing apps, we let the robots do the work and we simply check the dashboards (this also helps after we have major outages or downtime on foundational systems like storage). The cost of synthetic testing has already been justified through avoided downtime.

"Neighborhood Watch" is our branding for ADB-wide Private Synthetic testing and monitoring.

Private Location Synthetics

STATUS	MONITOR NAME	TRIGGERED
OK	[Synthetics] Example HQ PowerBI (on premise)	1m
OK	[Synthetics] FileNet Synthetic Test for [REDACTED] - Production S...	3m
OK	[Synthetics] Notes G1 (myAcronyms) - Production Support	5m
OK	[Synthetics] Example HQ ERP	9m
OK	[Synthetics] Notes G4 (eMail) - Production Support	22m
OK	[Synthetics] Example HQ Cognos (Ops Dashboard)	25m
OK	[Synthetics] Example HQ FileNet WAS ND (MyChoice)	35m
OK	[Synthetics] Notes G6 (COMS) - Production Support	36m
OK	[Synthetics] Example HQ .NET/IIS/ASP.NET (MvAccess)	47m

Each of the synthetic tests on this dashboard are hyperlinked to the actual tests; which can be viewed, cloned/copied, and used as templates for creating your own synthetic tests.

Currently these synthetic tests are sending outage alerts to The Datadog House channel: **Neighborhood Watch**

O365 Synthetics

STATUS	MONITOR NAME	TRIGGERED
OK	[Synthetics] Example O365 SharePoint Site	11m
OK	[Synthetics] Example O365 SharePoint RUM Data Generator	2½h
OK	[Synthetics] Example O365 PowerBI (Cloud)	7h

Extranet Synthetics

STATUS	MONITOR NAME	TRIGGERED
Alert	[Synthetics] ADB Key Indicators Database - Unix	15m
OK	[Synthetics] FileNet Synthetic Test for ADB Disclosure Mngt - adm...	47m
OK	[Synthetics] FileNet Synthetic Test for [REDACTED] (External) - Pro...	1½h
ALERT	[Synthetics] Example CPD External User Login Example	2½h

Neighborhood Watch is also a good example of how our new operating model works. The role of the Production Support team is to look at the big picture—the holistic health of ADB's production IT landscape. That means that we can't build detailed synthetic tests for every app in the organization. What we can do is show the way by building basic tests to verify that, say, the application's homepage is working. Then Champions are responsible for more detailed instrumentation. That's the branding behind Neighborhood Watch: Production Support looks at the neighborhood but it's up to the Champions to set up their detailed "home-specific" monitoring.

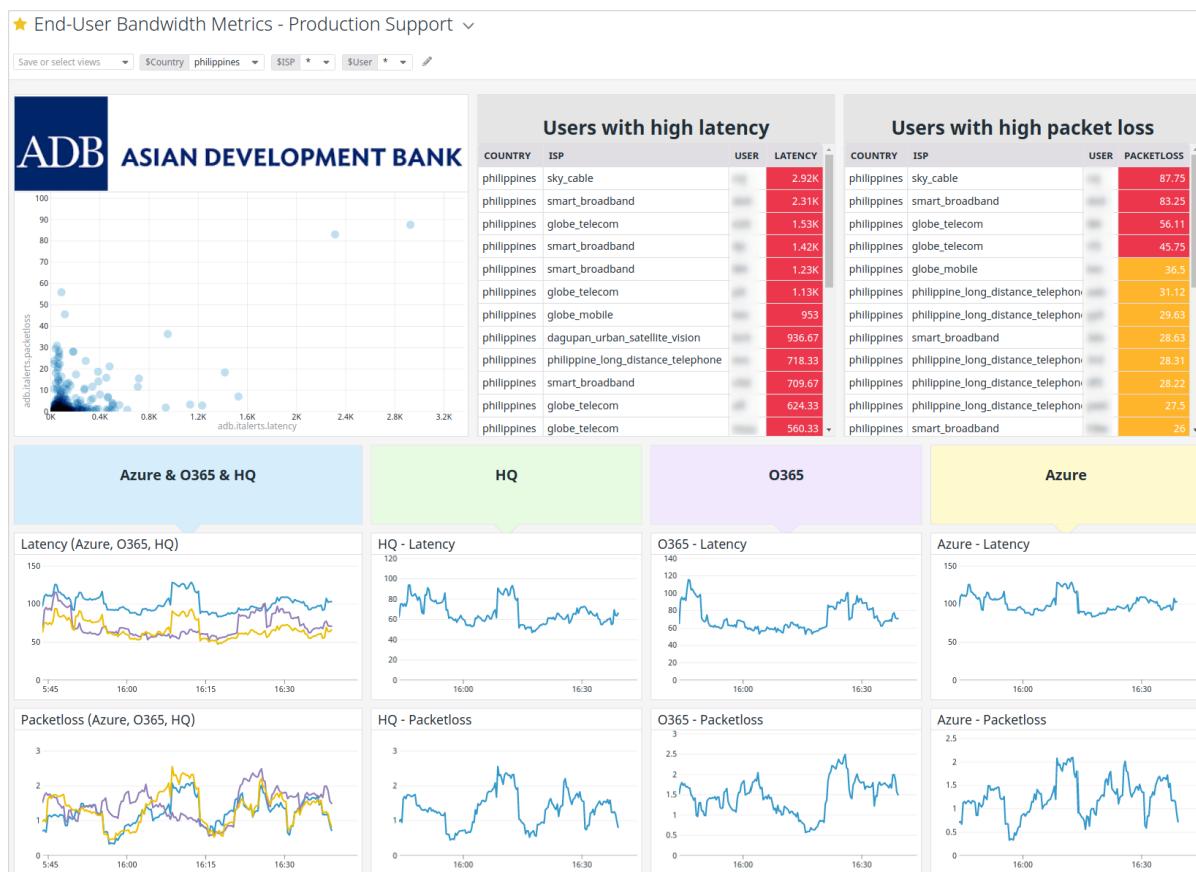
End User Bandwidth Monitoring

When Covid-19 hit, much of ADB's workforce returned to their home countries. Counting field offices, we now have staff connecting from nearly 70 countries across the globe. Thus, the health and monitoring of remote connectivity has rapidly become one of our top priorities.

We deployed an agent to end-user devices that sends back custom metrics to Datadog that capture the latency and packet loss for each

user between their device and ADB headquarters (Philippines), Azure, and Office 365. We then created an interactive dashboard in Datadog to easily filter, drill down, and view performance trends, which our Helpdesk and Network Teams are using to troubleshoot end user issues. We're also proactively alerting on ISPs that show degraded service.

A portion of our end-user bandwidth monitoring dashboard that helped us manage through Covid-19.



One of ADB's roles as a development institution is to add transformative value and knowledge anywhere we operate. To this end, we recently experienced an instance where a major ISP in one of the largest countries in which we operate had a serious country-wide performance degradation. Using our new global monitoring system we were able to detect and alert the local ISP to the performance issue before they themselves realized it was happening. In this instance, ADB's efforts provided tangible benefits not only to our staff, but to a significant portion of the country's population who subscribe to that ISP.

Conclusion

I should note that we didn't have a structured plan in place from the very beginning. Many of the practices occurred to us over time, through trial and error. I believe this was more effective than trying to push a typical enterprise project plan.

The observability gamification and governance practices I've described are working for Asian Development Bank. We're going to sunset three legacy monitoring systems by the end of the year. Like many enterprises, we're not very good at decommissioning systems—enterprise systems are sometimes like zombies. But we're actually going to do it, and it's a great feeling to be able to stand in front of management and say we got rid of three costly tools—and we improved performance in the process.

ADB is a key enabler for 48 developing countries in the Asia-Pacific region in regards to both local infrastructure and Covid-19 emergency response. If ADB staff are unable to access our IT systems to disburse funds to developing countries, the impact is enormous and compounded by the dire need for ADB-provided funding during the global pandemic. Thus, our ability to ensure that our staff can conduct business remotely is paramount to the well-being of these countries and their constituents.

It's a great feeling to be able to stand in front of management and say we got rid of three costly tools—and we improved performance in the process.

All of our nearly 900 servers have the Datadog agent installed and are reporting infrastructure performance. And we have synthetic testing coverage of over 20% of the application portfolio. But we still have a ways to go. We are at roughly 10% coverage for application performance monitoring, logging, and real user monitoring. We are confident that we will drive full coverage of the entire stack and truly have one unified monitoring platform—we'll be operating as one team without silos.

ACKNOWLEDGMENTS

I would like to thank my peers in the Production Support Team for facilitating the success of this entire process: Gerardo Remo Jr., Dave Isla, Michael Martinez, Mervy Santos, Joel Manigo, Vincent Lagarde, and Hazel Bacolod.

I would also like to recognize Krista Lozada for providing the backend engineering expertise (magic) that enabled our Synthetic Monitoring agents to authenticate and function in ADB's environment.

It should also go without saying that each of the ADB Datadog Champions in our program deserve a big pat on the back—none of this would be possible without their proactive participation.

A final thanks goes to our ADB IT Executive Sponsors and Management. They were very supportive of our experimentation with a radical new approach to product deployment and the introduction of an innovative crowd-sourced operating model.