

APRICOT 2026 Fellowship Report

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Organization	Bangladesh Research and Education Network (BdREN)
Country	Bangladesh
Fellowship Program	Practical Virtualization with Hybrid Strategies APRICOT Fellows Soft Skills Workshop
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Executive Summary

APRICOT 2026 in Jakarta was an experience that reshaped how I think about professional development in the research and education networking community. While the technical masterclass on Practical Virtualization with Hybrid Strategies gave me valuable hands-on depth in areas directly relevant to my work at BdREN, what I will carry longest from Jakarta are the conversations that happened over lunch, at the social dinners, and in the corridors between sessions.

The fellowship accommodation was a wonderful base for the entire experience. The food was amazing throughout, and the warm, comfortable surroundings made it easy to focus on learning and connecting with people.

The Soft Skills Workshop was the highlight of the fellowship, giving me new tools for communicating ideas clearly and building bridges across cultural and technical boundaries. Meeting inspiring practitioners from across the Asia-Pacific region, including ISOC President and CEO Sally Wentworth, among many others, reinforced my conviction that the real power of fellowships like this lies in the network of people you build.

On the technical side, I developed a proof-of-concept web application during the fellowship period, a browser-based VM provisioning tool that generates Cloud-Init configuration from simple user inputs. My instructor's enthusiastic response to this work has encouraged me to develop it into a full open-source tool for the research and education community. I also intend to bring this experience full circle by organising a train-the-trainers workshop at BdREN for university IT personnel, extending the knowledge gained here to the broader Bangladeshi academic community.

Who I Am and Why I Applied

I work as Manager, Innovation at Bangladesh Research and Education Network (BdREN), where I am responsible for systems and private cloud infrastructure. BdREN provides VM-based cloud services to member institutions, primarily university faculty members, and is increasingly involved in AI infrastructure and AI-driven applications for the research and education sector.

Our cloud environment is built on OpenStack and I manage day-to-day operations covering compute, storage, and network provisioning for our academic users. Practical challenges I face include streamlining VM provisioning workflows, improving automation using Cloud-Init, integrating AI workloads onto our infrastructure, and helping faculty researchers adopt cloud services effectively.

I applied for this fellowship because I wanted to deepen my technical understanding of virtualization in production settings and learn from practitioners who operate at scale. But equally, I was drawn by the prospect of connecting with peers across the Asia-Pacific region, people dealing with the same challenges of running research and education infrastructure with limited resources but high expectations.

Setting the Stage: Jakarta and the Veranda Hotel

The fellowship accommodation at Veranda Hotel Pakubuwono was outstanding. It offered a comfortable escape after intensive days of learning. The spacious rooms and amenities, like the outdoor pool and Wyl's Kitchen restaurant, enhanced the experience. The food was exceptional, with a variety of Indonesian, Western, and Asian fusion dishes that made meals truly memorable.

Jakarta's vibrant atmosphere, coupled with the hotel's warm hospitality, created an ideal environment for deep learning and meaningful connections.

The Real Value: Connections Made Beyond the Classroom

If I had to name the single greatest takeaway from APRICOT 2026, it would not be a lab exercise or a configuration command. It would be the people I met. The hours spent over lunch, the social dinners, and the informal conversations between sessions were, in my view, more valuable than any single technical session.



Lunchtime Conversations

Meals became the best kind of workshop. Sitting with fellows and instructors from different countries and organisations, I found that the most honest, unscripted conversations happened over food. We talked about the real constraints of running public-interest networks, budget pressures, staffing, and the challenge of justifying infrastructure investment to university management. These exchanges gave me perspectives and strategies I could not have learned from a slide deck.

Social Dinners and Fellowship

The evening social events were where the fellowship truly came alive. Over dinner, the formal roles of instructor and trainee dissolved, and what remained were curious, passionate people who genuinely care about how technology serves society. I made real friends during these dinners, friendships I expect to carry well beyond the event.

A Network That Outlasts the Event

The connections I made in Jakarta are not merely contacts in a list. They are colleagues who understand the work, who face similar challenges, and who are generous with their knowledge and time. I left Jakarta with a richer professional network and a clearer sense of the community I am part of, and that matters enormously for the kind of long-term collaborative work that BdREN aspires to.

Technical Masterclass: Practical Virtualization with Hybrid Strategies

The three-day masterclass was delivered by an outstanding team of instructors: Hervey Allen (NSRC), Brian Candler (NSRC), Carlos Armas (NSRC), and Paul Ooi Cong Jen (Takizo Solutions Sdn Bhd). The lab setup prepared by the NSRC team was remarkable. Everything was clear, well-structured, and easy to follow, which allowed participants to focus entirely on learning rather than troubleshooting the environment itself. The shared AWS lab environment was particularly well-organised, giving everyone a consistent and reliable platform for hands-on practice.

Cloud Foundations, Security, and Cost Awareness

The opening sessions grounded us in the architecture of cloud services, the relationship between SaaS and IaaS, the division of responsibility between provider and customer, and the foundational building blocks of compute, storage, and networking. The discussion of VPC design, Elastic IP usage, load balancing, and DNS was particularly relevant to BdREN's environment.

A recurring theme was cost visibility. The sessions made clear how easily poor design decisions or unmonitored resources can inflate cloud expenses. For BdREN, which provides cloud services to universities that often have constrained budgets, this awareness directly



informs how we design and present our offering. The security component, covering IAM hygiene, access control, and the necessity of SSH key-based authentication, reinforced practices I already follow but gave me clearer language to explain their importance to my team.

Infrastructure as Code: Terraform and Cloud-Init

The Terraform sessions were among the most practically useful. Provisioning infrastructure through code rather than manual GUI interaction is something I have been working to expand at BdREN, and the labs reinforced both the mechanics and the rationale. Similarly, working with Cloud-Init in both AWS and Proxmox contexts sharpened my understanding of how first-boot automation can dramatically reduce manual configuration overhead across large VM deployments.

Virtualization Operations with Proxmox and KVM

The Proxmox sessions connected theory to real operational practice. Creating cloud-image templates, deploying VMs with Cloud-Init automation, and performing live and cold migration gave me a clearer mental model of workload mobility and high availability design. The nuanced discussion of when containers are appropriate versus when full VM isolation is necessary was especially relevant for BdREN's multi-tenant academic environment.

Storage: From LVM to Ceph

The storage sessions covered a range of approaches, from local block storage via LVM and replicated block storage with Linstor, to distributed storage with Ceph. The Ceph session was the most directly applicable to my work at BdREN, where Ceph underpins our storage layer. Observing a simulated failure and recovery sequence gave me practical insight into how distributed storage maintains resilience and why cluster monitoring cannot be an afterthought.



Observability, Governance, and Strategic Framing

The monitoring sessions, using Prometheus and Grafana, demonstrated how proactive visibility into infrastructure health changes the quality of operations, from reactive troubleshooting to informed management. The closing sessions on infrastructure strategy, weighing on-premises versus public cloud versus hybrid approaches against cost, compliance, scalability, and operational complexity, offered a valuable frame for conversations I regularly have with BdREN stakeholders.

Highlight: The Soft Skills Workshop

Of all the sessions at APRICOT 2026, the Soft Skills Workshop left the deepest impression on me. Titled 'The Art of Connection,' it tackled something that technical professionals often neglect: how to communicate ideas in ways that actually reach people.

Rethinking Nervousness

One of the most memorable moments was the discussion about nervousness in public speaking. The facilitator drew an analogy between adrenaline and network congestion; if it builds up without being managed, performance degrades. As someone who thinks naturally in network terms, this reframe was immediately useful. I left understanding that nervousness is not a flaw to be eliminated, but a signal to be managed through preparation, breathing, and deliberate pacing.

Shifting Focus from Self to Audience

Another insight that resonated with me was the idea that confidence grows when you shift your attention from 'how do I appear?' to 'is my message useful to this audience?' This is a small mental adjustment with a large practical effect. When I focus on whether the person in front of me is understanding and benefiting from what I am saying, the self-consciousness fades.

Structure: Problem, Importance, Solution, Justification

The group activity that closed the workshop was particularly instructive. Each team was given a policy topic and asked to present it using a clear four-part structure: what is the problem, why does it matter, what solution do we propose, and why is it the best option. This structure is deceptively simple and deceptively powerful. I have already started applying it in internal presentations at BdREN, and I plan to teach it to my team.

Practical Tools for Everyday Communication

Beyond the formal sessions, the workshop gave me specific, usable techniques: pausing at key moments for emphasis, avoiding the tendency to rush when nervous, and, as a non-native English speaker, practising flow and naturalness rather than word-by-word precision. These are small adjustments that together make a significant difference in how ideas land.

Building During the Fellowship: A Web-Based VM Provisioning Tool

One of the things I am most proud of from the APRICOT 2026 period is something I built during the fellowship itself. Drawing directly on the Cloud-Init material covered in the masterclass, I developed a proof-of-concept web application that allows a user to fill in a simple browser-based form, specifying parameters such as hostname, user credentials, network configuration, and package requirements, and generates a complete Cloud-Init configuration ready to attach to a VM provisioning workflow.

The tool is designed with non-technical users in mind: faculty members or researchers who need a VM provisioned quickly, without needing to understand the underlying configuration syntax. When I demonstrated the application to one of the instructors, the response was enthusiastic. They were immediately interested in the concept and encouraged me to develop it further.

I intend to build on this proof of concept and release it as a full open-source application under a permissive licence, making it available both to the broader research and education networking community and specifically to the APRICOT community. The goal is a tool that any NREN or

campus IT team could deploy to simplify VM provisioning for their users, reducing friction and improving consistency.

What Comes Next: Train the Trainers and Open Source

Train-the-Trainers Workshop at BdREN

The most direct way I can multiply the value of this fellowship is to share what I have learned with the university IT community in Bangladesh. I plan to organise a training workshop for university IT personnel covering the core topics of the APRICOT masterclass: virtualization fundamentals, Cloud-Init and automation, storage operations, and infrastructure strategy. This will be designed explicitly in a train-the-trainers modality, equipping participants not just with knowledge, but with the confidence and structure to pass it on within their own institutions.

In this sense, APRICOT 2026 itself serves as a model. The structured communication approach from the Soft Skills Workshop, centred on problem, importance, solution, and justification, will inform both the design of the workshop and the way I coach participants to present technical ideas to their own management and colleagues.

Open-Source VM Provisioning Application

I will continue developing the web-based VM provisioning proof of concept into a production-ready open-source tool. Development priorities include a cleaner user interface, support for multiple Cloud-Init datasources, integration with common OpenStack and Proxmox APIs, and documentation sufficient for a community to adopt and extend it. I plan to engage the APRICOT and APAN communities early, both to gather requirements and to build a contributor base.

Internal Knowledge Sharing at BdREN

I will document the key technical insights from the masterclass in BdREN's internal knowledge base, covering Ceph operations and monitoring, Terraform workflow patterns, Cloud-Init templating, and infrastructure strategy considerations. I will also arrange a focused internal session to share these learnings with the systems and operations teams.

Staying Connected

I intend to stay in active contact with the colleagues and friends I made in Jakarta, particularly Sally Wentworth and the other fellows whose work intersects with BdREN's. These relationships are an asset not just for me personally, but for BdREN's engagement with the wider research and education networking community.

Acknowledgements

I want to express my deep gratitude to the APRICOT 2026 organising team and to the instructors, Hervey Allen, Brian Candler, Carlos Armas, and Paul Ooi Cong Jen, who delivered the masterclass with clarity, patience, and genuine generosity. The lab environment they set up was exemplary, making the technical content accessible and enjoyable to work through.

I am particularly grateful to the facilitators of the Soft Skills Workshop, whose work changed how I think about communication, and the insights during the fellowship were genuinely inspiring.

My thanks also go to the fellowship coordinators, especially John Rattray, for his tremendous support and making this opportunity possible. The chance to learn alongside practitioners from across the Asia-Pacific region and to form the friendships and connections I did is something I will draw on for years to come. This experience will directly shape how I build and operate BdREN's infrastructure, how I engage with our university members, and how I represent Bangladesh within the international research and education networking community.