AWS re:Invent

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Deep dive on new Amazon AppStream 2.0 Elastic fleets

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Agenda

- What are Elastic fleets?
- Software as a service deployment pattern
- Enterprise application deployment pattern
- Questions

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What are Elastic fleets?

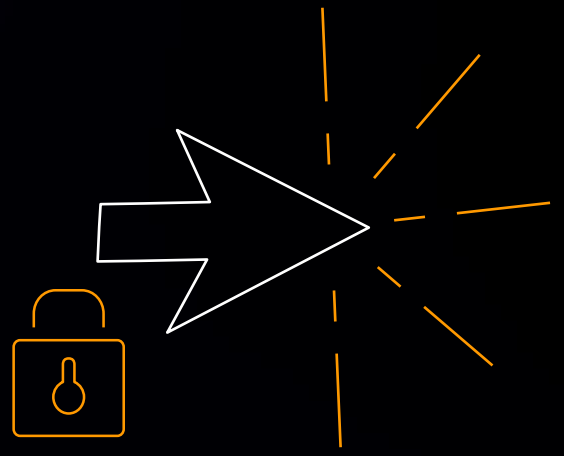
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Fully managed
Non-persistent
Applications/desktop streaming

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Encrypted pixel stream



Co-located compute, graphics, apps, data

Users

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What are Elastic fleets?

AppStream 2.0–managed capacity

- No longer manage capacity or predict usage
- No auto scaling rules to create or manage
- Deliver applications without building or managing images

Pricing per streaming session

- Pay for the duration of the streaming session, in seconds
  - Note: 15 minute minimum
- Hourly rate based on the instance type/size and OS
  - Microsoft RDS SAL user fee does not apply to Amazon Linux 2 sessions

aws

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How do Elastic fleets work?

Virtual hard disk (VHD)–based application delivery

- Install your application to a VHD then upload it to an Amazon S3 bucket in your account
- The instance downloads the VHD(s) when the instance is reserved for the user
  - You provide a set-up script for how to mount the VHD
  - The total size of VHDs should be smaller than 2 GB because they need to be fully downloaded before session launch
- Application must support portability, similar to installing and using from a USB flash drive

Elastic fleet

- AppStream 2.0 manages pools of streaming instances built from the base images
  - stream.standard.small (2 vCPU / 2 GiB memory), stream.standard.medium (2 vCPU / 4 GiB memory)
- Instance assigned to user/customer at user request time
  - ENI created/attached on instance being assigned to the user, then VHD downloaded/mounted
  - Session start time depends on the size of the VHD and whether App Settings is enabled
- Max concurrency parameter replaces “Desired Capacity”

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Considerations

Application support

- Portable applications
  - Applications that can run without needing a reboot or machine-specific configuration
  - Generally excludes kernel drivers, Windows services
- Application size: <= 2 GB (smaller is better)
- Limited instance type support

No Active Directory support

- Instances can’t be joined to a Microsoft Active Directory domain
- Limited access to Active Directory–managed resources
  - Users can manually specify credentials when accessing file shares or other resources

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Software as a service deployment pattern

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Background

ExampleCo is a financial ERP software vendor for SMB

They sell a perpetually licensed client/server application

Primarily targets small and medium healthcare and financial services companies

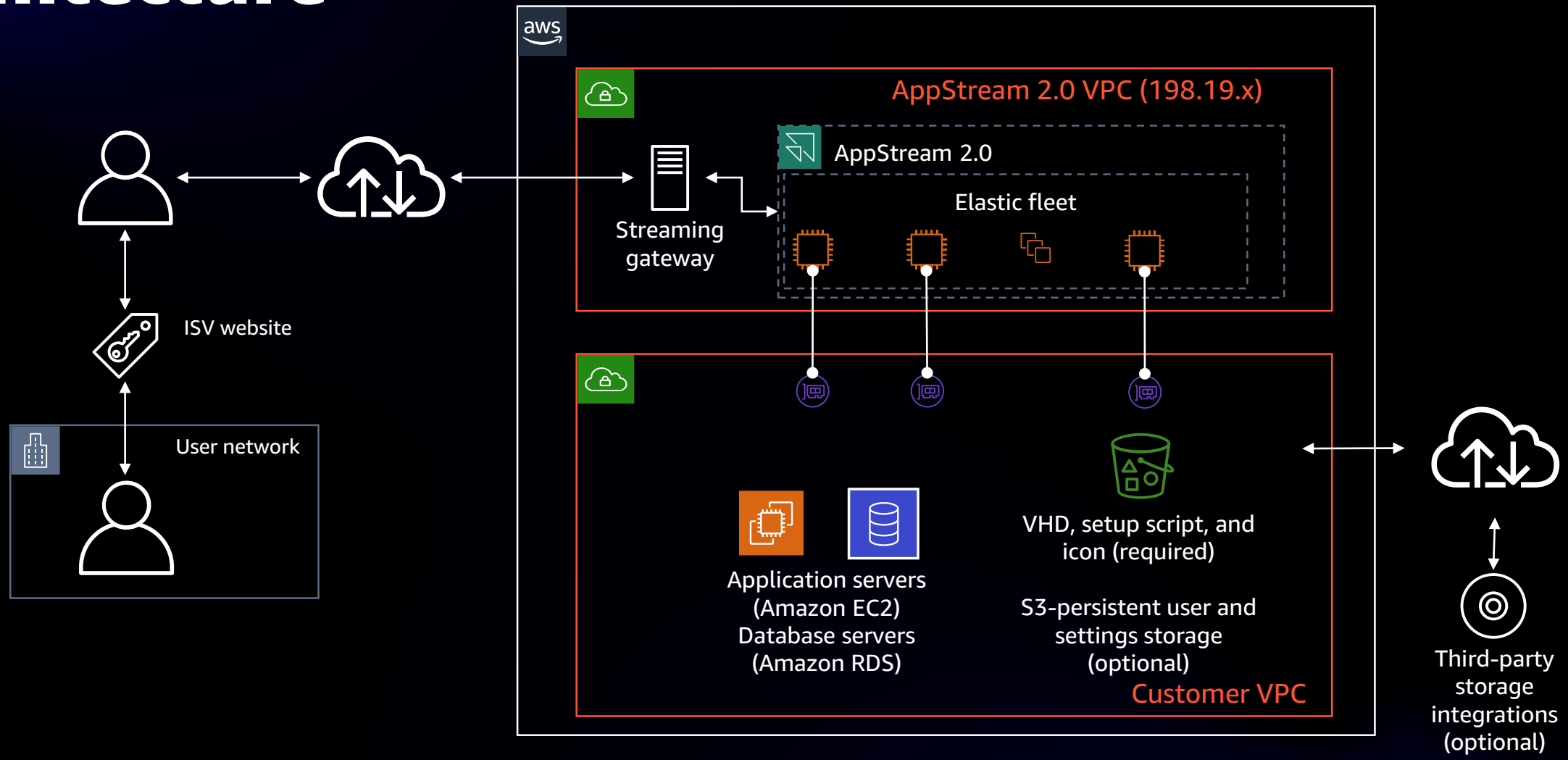
Their software provides financial and managerial accounting for companies

Customers generally have no or limited IT resources to manage desktop software or servers

ISV wants to SaaS-ify the product but doesn’t have webdevs or hosting experience

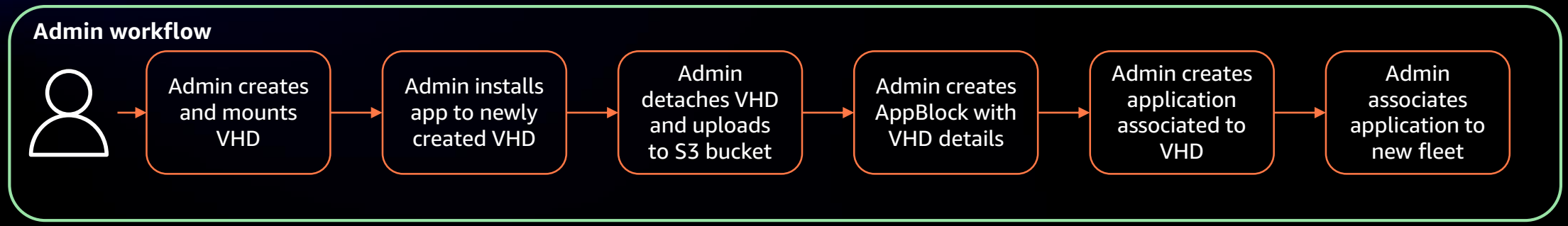
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Architecture



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Admin experience



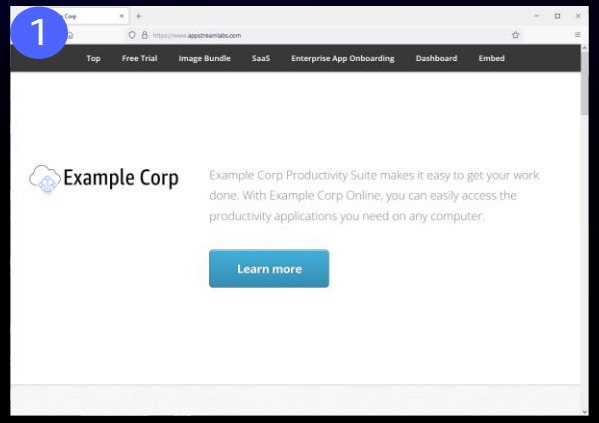
Automate by integrating to your compilation process

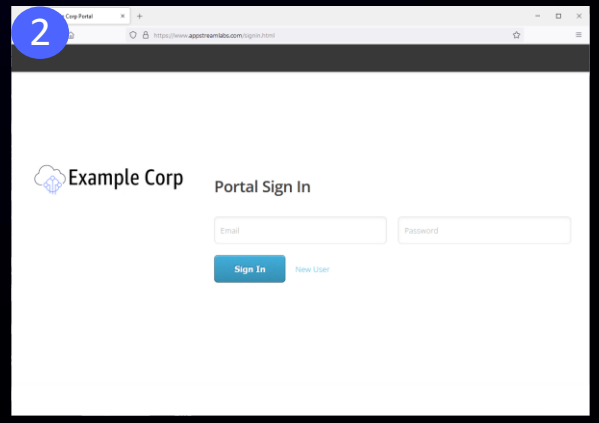
Software update process

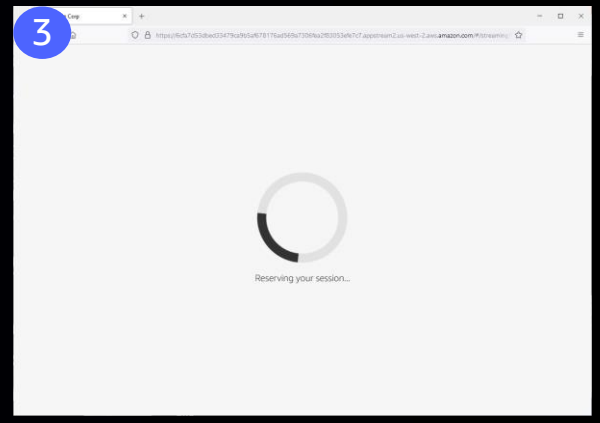
- Backward compatible/minor update: Upload new version of VHD to the S3 bucket
- Backward incompatible/major update: Cut over to new fleet with new application & app block

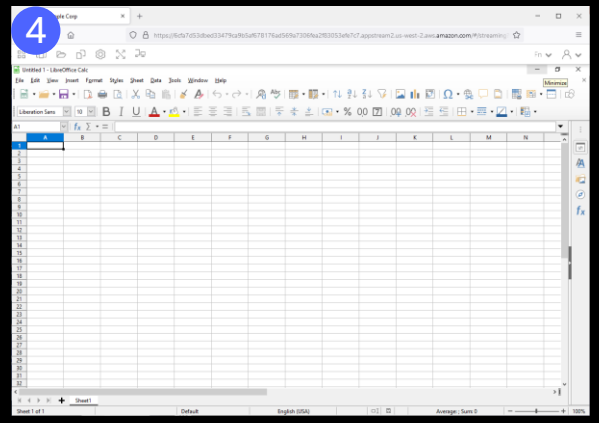
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User experience





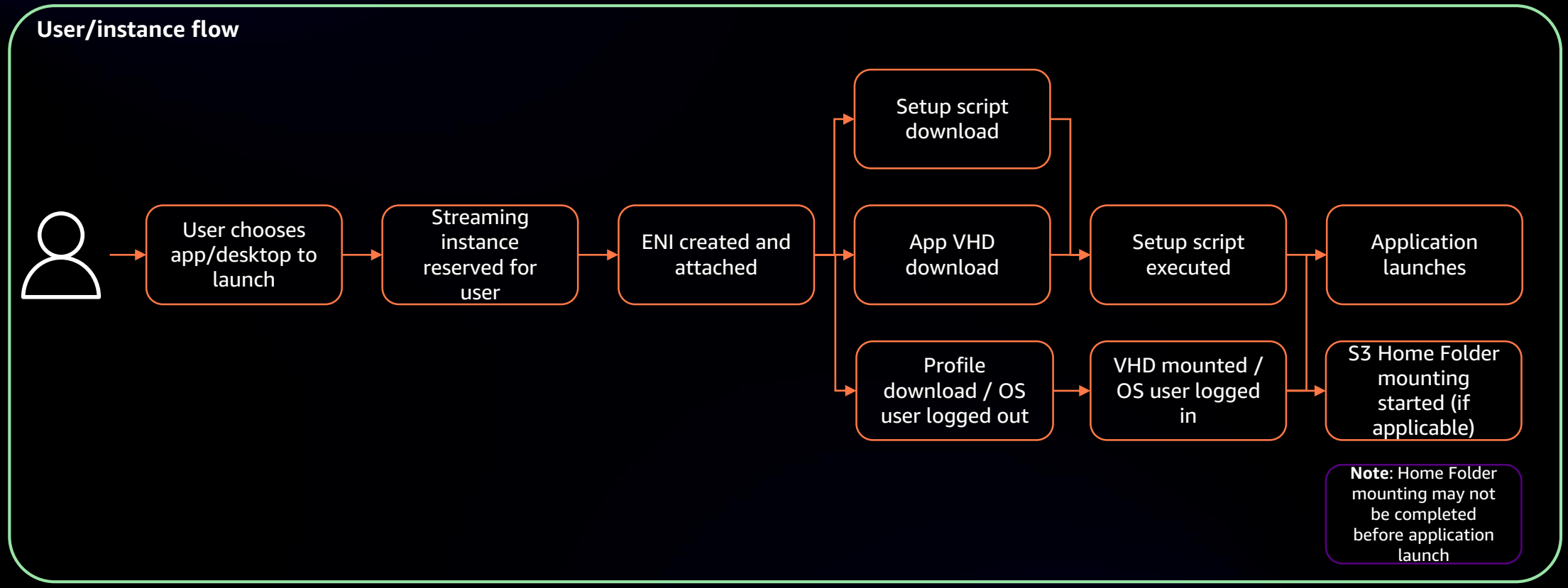




1. User starts on the ISV web portal, chooses the sign-in option
2. User enters their username and password (or other ISV-managed credentials)
3. User is seamlessly redirected to the appropriate Elastic fleet
4. Application automatically launches, and user can use their application as they normally would

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What happens on the fleet



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Solution

ExampleCo delivered a subscription service with Elastic fleets

Lifted and shifted the application to Elastic fleets – no engineering investment or rewrite

ExampleCo offered subscription service as a value-added benefit

Customers simply need internet and a browser to access the software

Cost per streaming session simple to calculate: (Streaming duration / 60 minutes) * hourly rate

- Example: User streams for 25 minutes on a Windows standard.medium: (25 minutes/60 minutes) * $0.15 per 60 minutes = $.063
- Usage Reports maps to streaming session duration for cost

Longer term, ExampleCo is rewriting the application to be web-native on AWS

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Enterprise application deployment pattern

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Background

ExampleCo wants to provide secure access to production hosts

GUI access to production hosts while preventing data exfiltration

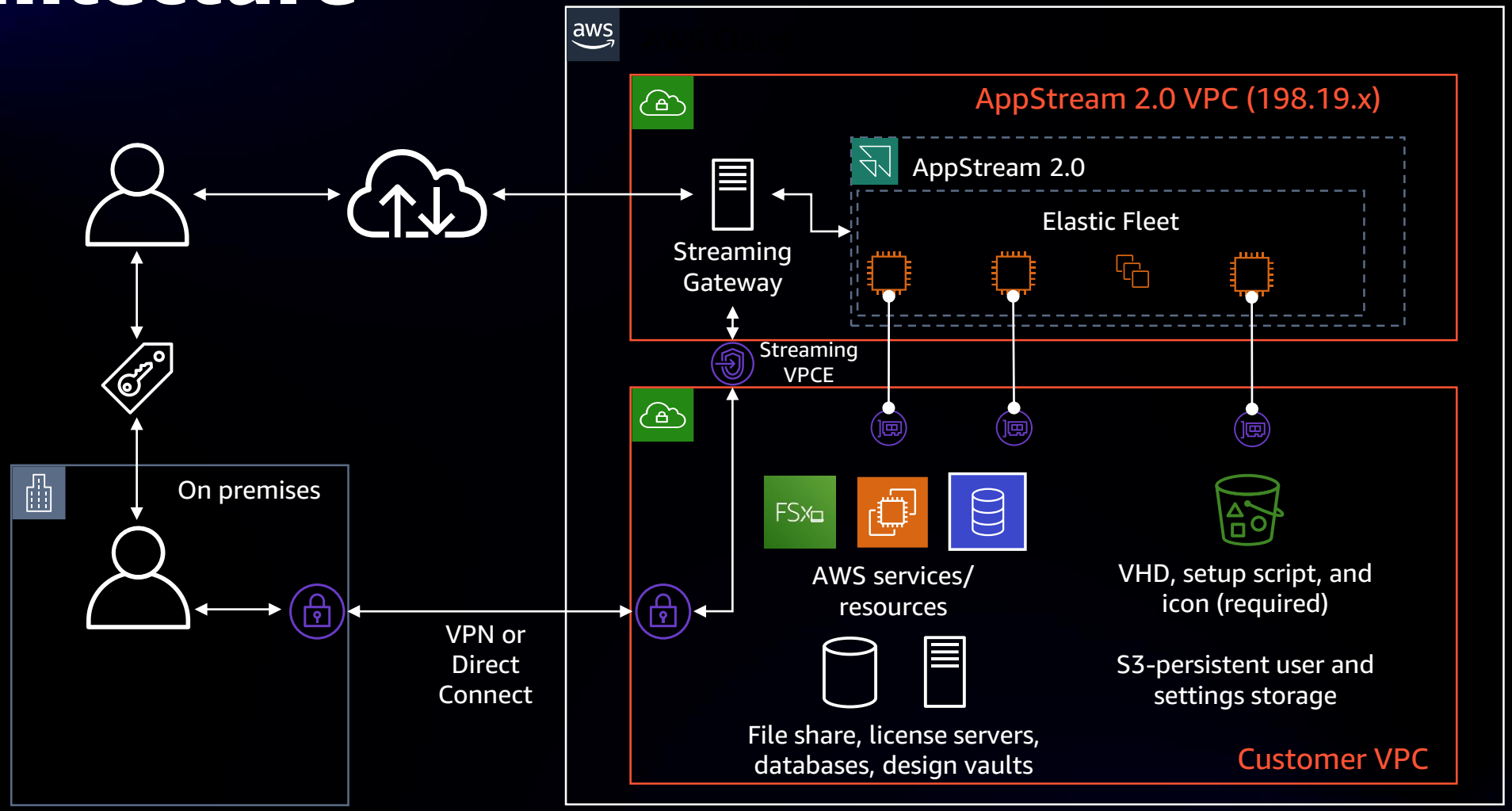
Primary applications are SSH, RDP, and web browser

Currently using Microsoft Windows Server terminal hosts/sessions, no autoscaling

Access restricted to the corporate network

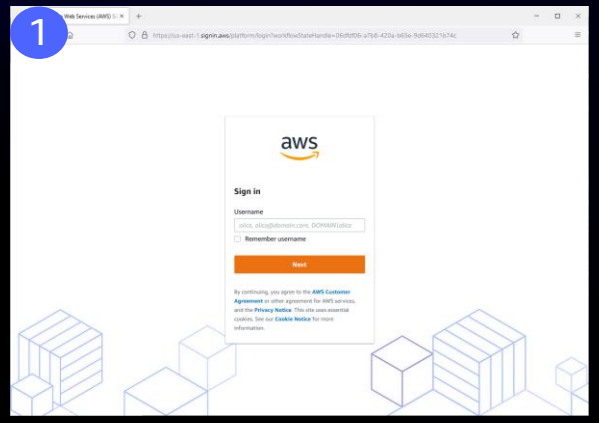
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Architecture

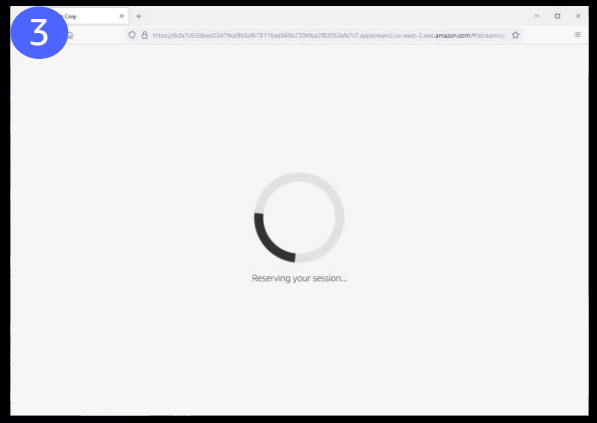


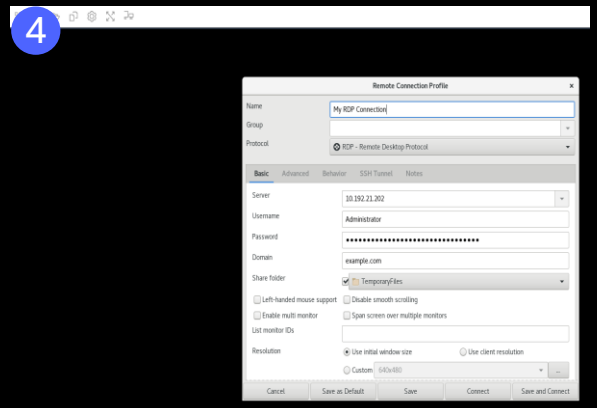
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User experience









1. User signs into the SAML portal (AWS SSO in the screenshot), then chooses the bastion host app
2. User chooses which app they need
3. User is seamlessly redirected to the appropriate Elastic fleet
4. Application launches, and user can use their application as they normally would
    - Stack restricted to clipboard in, file upload only, and no printing

aws

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Solution

ExampleCo delivered a restrictive bastion host with Elastic fleets

Implemented VPC streaming endpoint to restrict access to corporate network

Migrated to Amazon Linux 2 to eliminate the operating system license cost

Replaced 4x EC2 instances with standard.small Elastic fleet instances

- 4x Windows Server m5.XL w/ 100 GB GP3 EBS in Oregon = (4 x $0.376/hr x 720 hrs/mo) + (4 x 100 GB x $0.08 GB/mo) = $1,115/mo
- RDS CAL license required per user

Elastic fleets pricing

- Elastic fleets: $0.076 per hour, billed per second, minimum of 15 minutes; no charges when not in use

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Thank you!

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