SaaS

With Azure and ASP.NET Core

Building SaaS applications with ASP.NET Core and Azure

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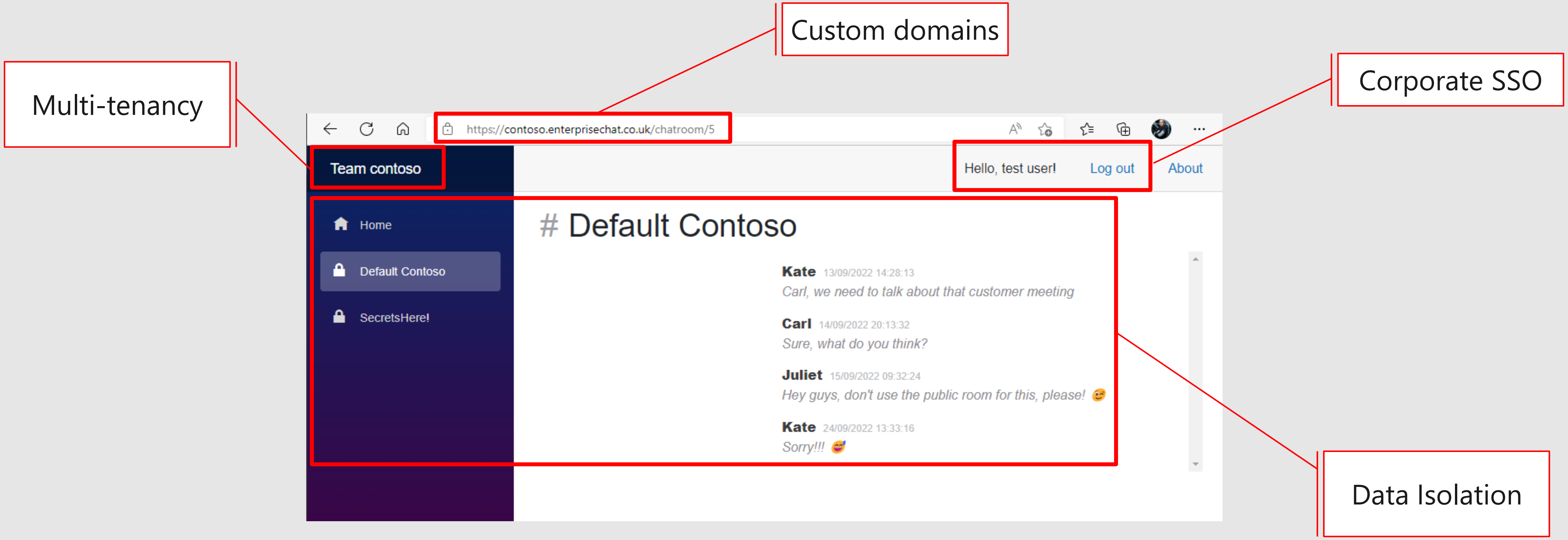
Our SaaS playground: enter Enterprise Chat

(a.k.a. "you want to build Slack, but you can't design a website" ☺)



Default Contoso

Kate 13/09/2022 14:28:13
Carl, we need to talk about that customer meeting

Carl 14/09/2022 20:13:32
Sure, what do you think?

Juliet 15/09/2022 09:32:24
Hey guys, don't use the public room for this, please! 😊

Kate 24/09/2022 13:33:16
Sorry!!! 😅

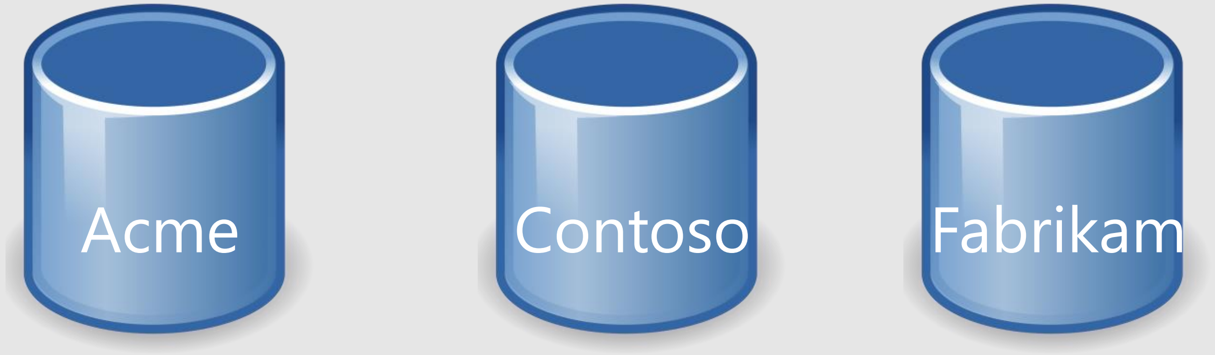
Before we proceed, one important caveat

What we are going to work on, is only

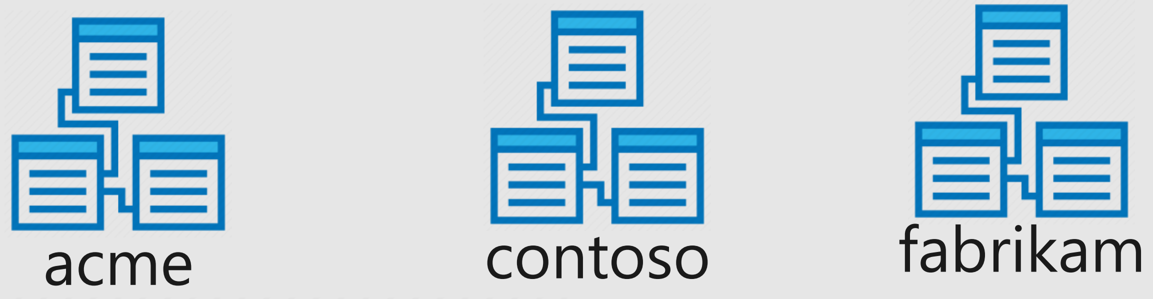
ONE POSSIBLE SOLUTION

Keeping data siloed: isolation strategies

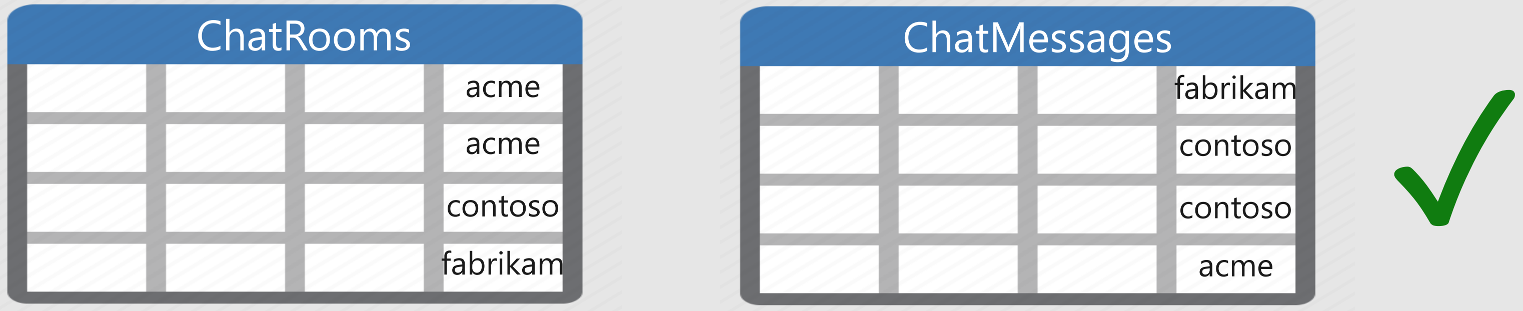
Separate databases



Separate schemas



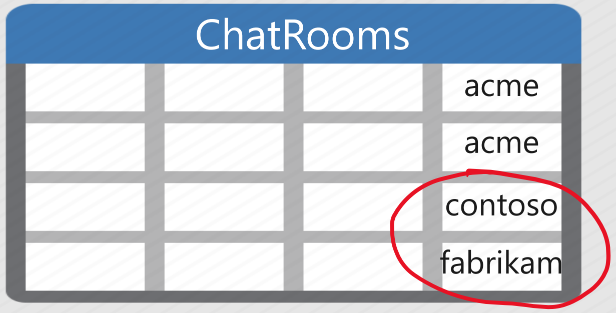
Discriminator column

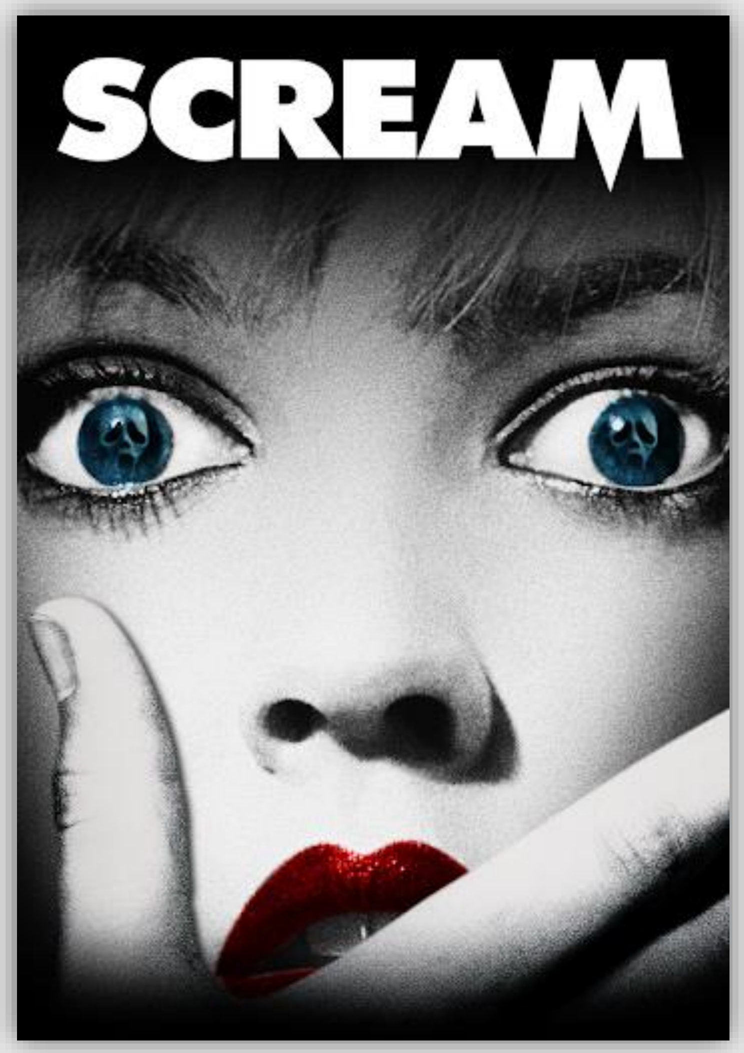


Ok, discriminator column, but how?!

```
SELECT *
FROM Rooms
WHERE CompanyID = 'acme'
```

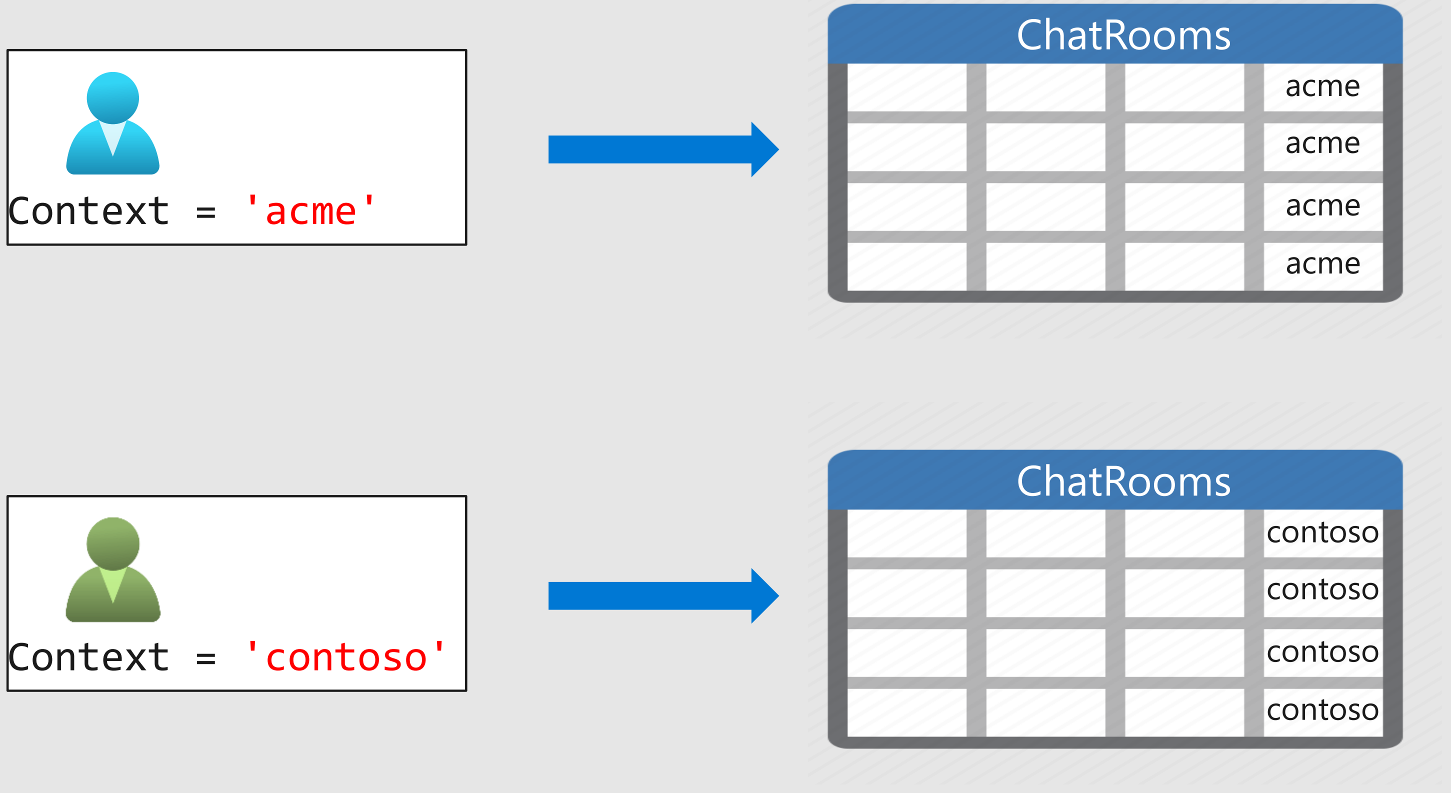
What if you forget it?





SQL Server's Row Level Security

One possible option to have an "allow-list" approach



Rooms Table Access Policy

"only return a row if its companyID matches the one in the context"

Demo

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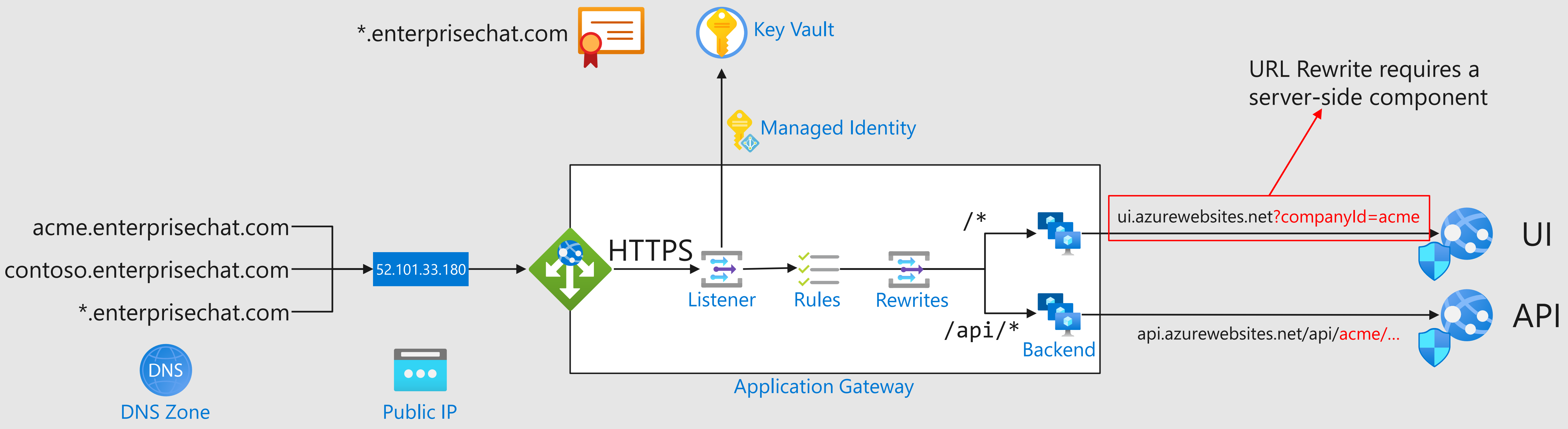
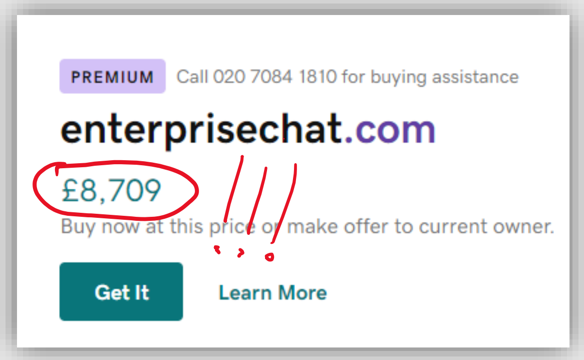
Discriminator column and Row-level security

Delivering your content: multi-tenant networking





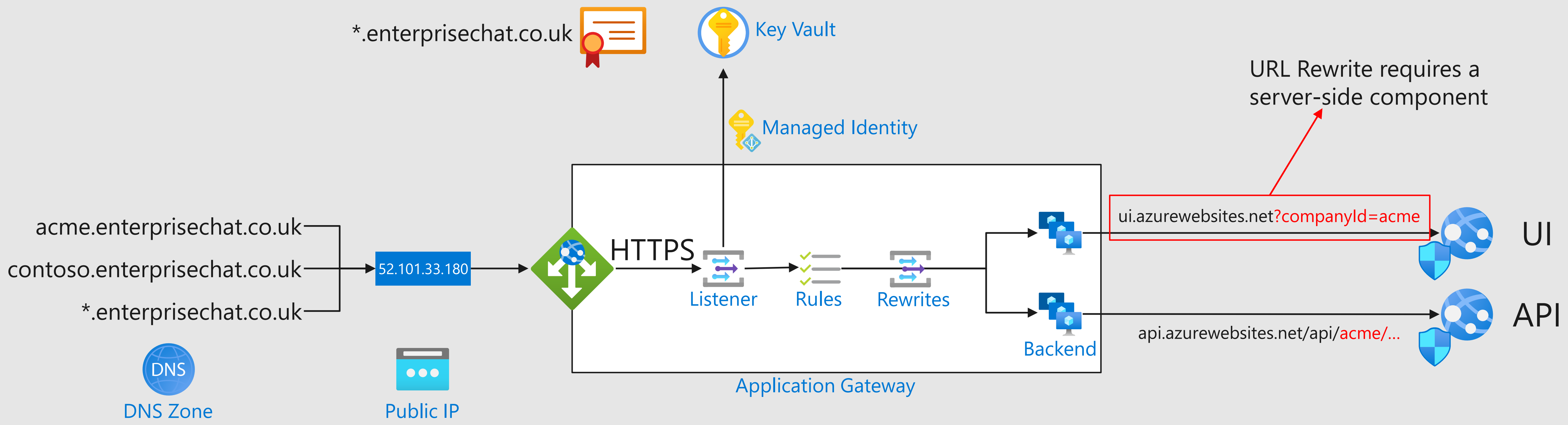
PREMIUM Call 020 7084 1810 for buying assistance

enterprisechat.com

£8,709

Buy now at this price or make offer to current owner.

Delivering your content: multi-tenant networking


*.enterprisechat.co.uk
Key Vault
Managed Identity
URL Rewrite requires a server-side component
acme.enterprisechat.co.uk
contoso.enterprisechat.co.uk
*.enterprisechat.co.uk
52.101.33.180
HTTPS
Listener
Rules
Rewrites
Backend
ui.azurewebsites.net?companyId=acme
UI
api.azurewebsites.net/api/acme/...
API
Application Gateway
DNS
DNS Zone
Public IP

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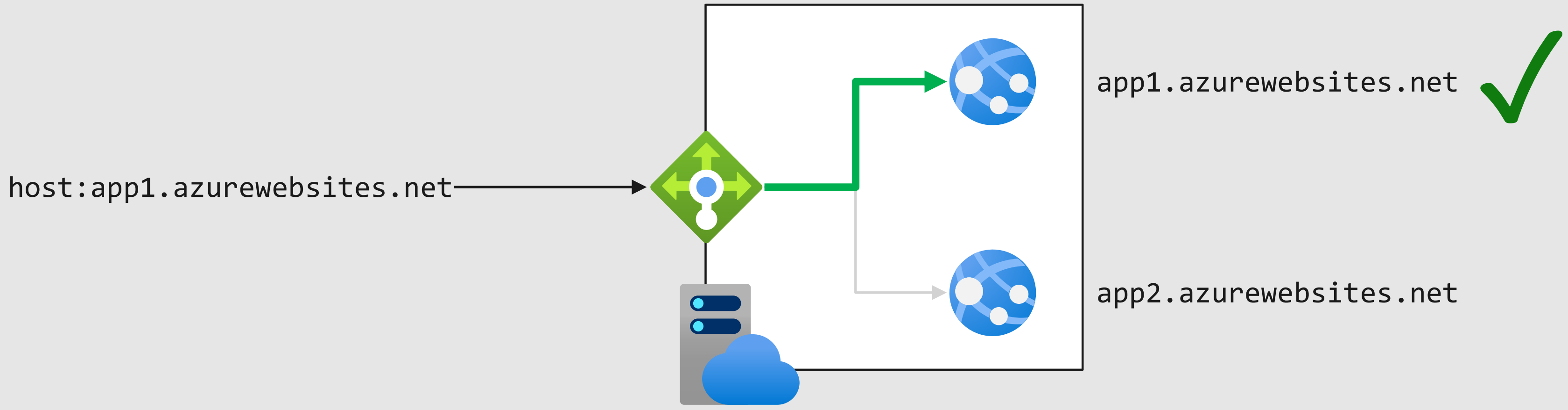
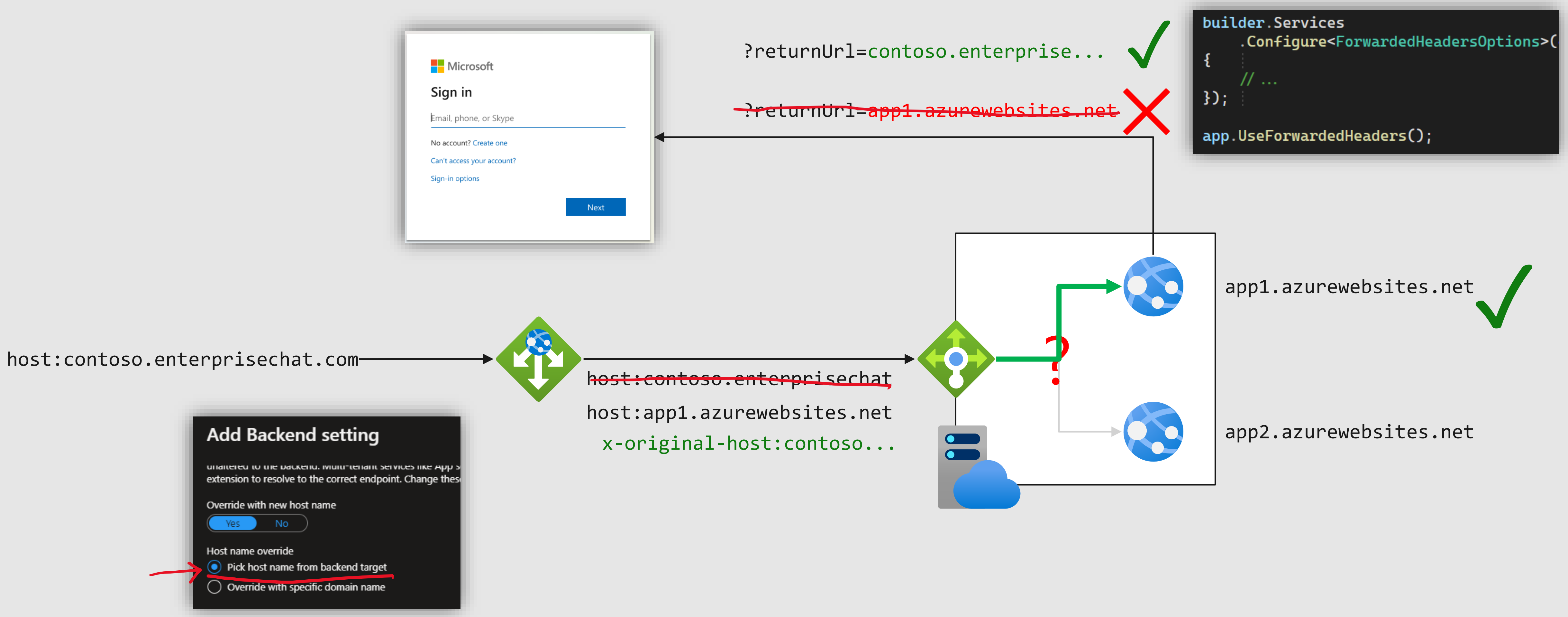
Azure delivery network

Beware of multi-site services like App Services



Beware of multi-site services like App Services



?returnUrl=contoso.enterprise...
~~?returnUrl=app1.azurewebsites.net~~
host:contoso.enterprisechat.com
~~host:contoso.enterprisechat~~
host:app1.azurewebsites.net
x-original-host:contoso...
?
app1.azurewebsites.net
app2.azurewebsites.net

```
builder.Services
    .Configure<ForwardedHeadersOptions>(
{
    // ...
});

app.UseForwardedHeaders();
```

Microsoft

Sign in

Email, phone, or Skype

No account? Create one

Can't access your account?

Sign-in options

Next

Add Backend setting

unaltered to the backend. Multi-tenant services like App s
extension to resolve to the correct endpoint. Change thes

Override with new host name

[✓ Yes] No

Host name override

[✓ Pick host name from backend target]

Override with specific domain name

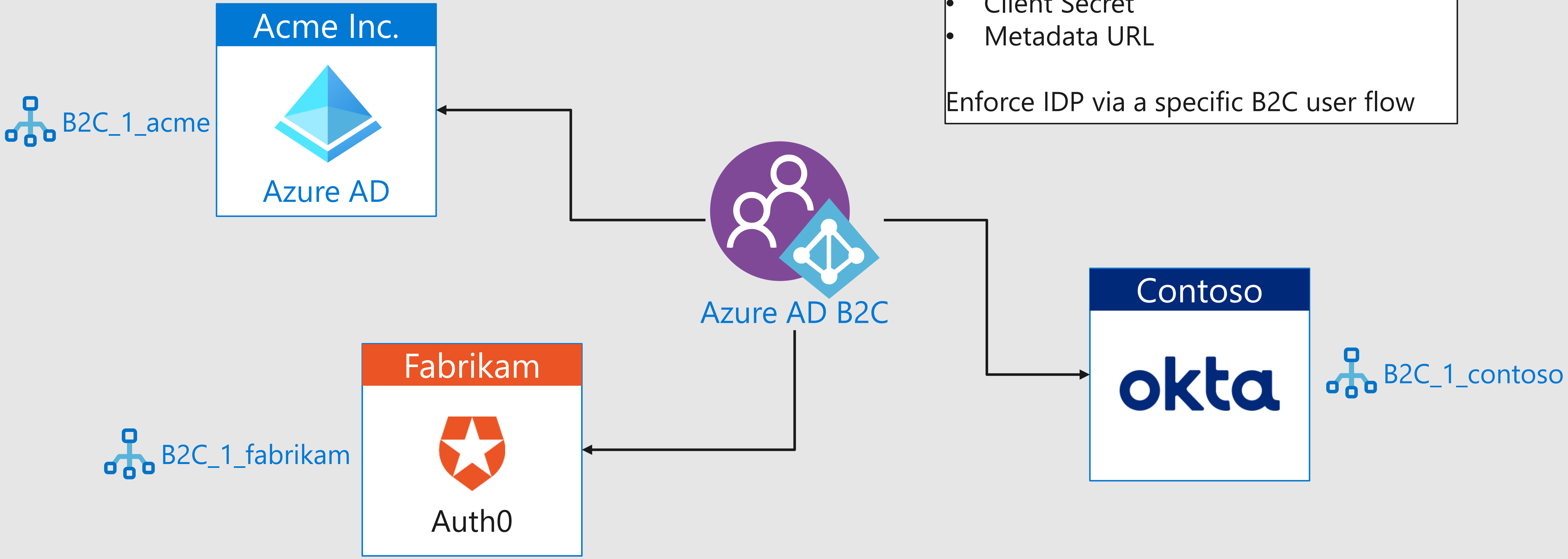
Enterprise-ready security: corporate SSO

We can work with any IDP which supports

OpenID Connect

- Client ID
- Client Secret
- Metadata URL

Enforce IDP via a specific B2C user flow



Demo

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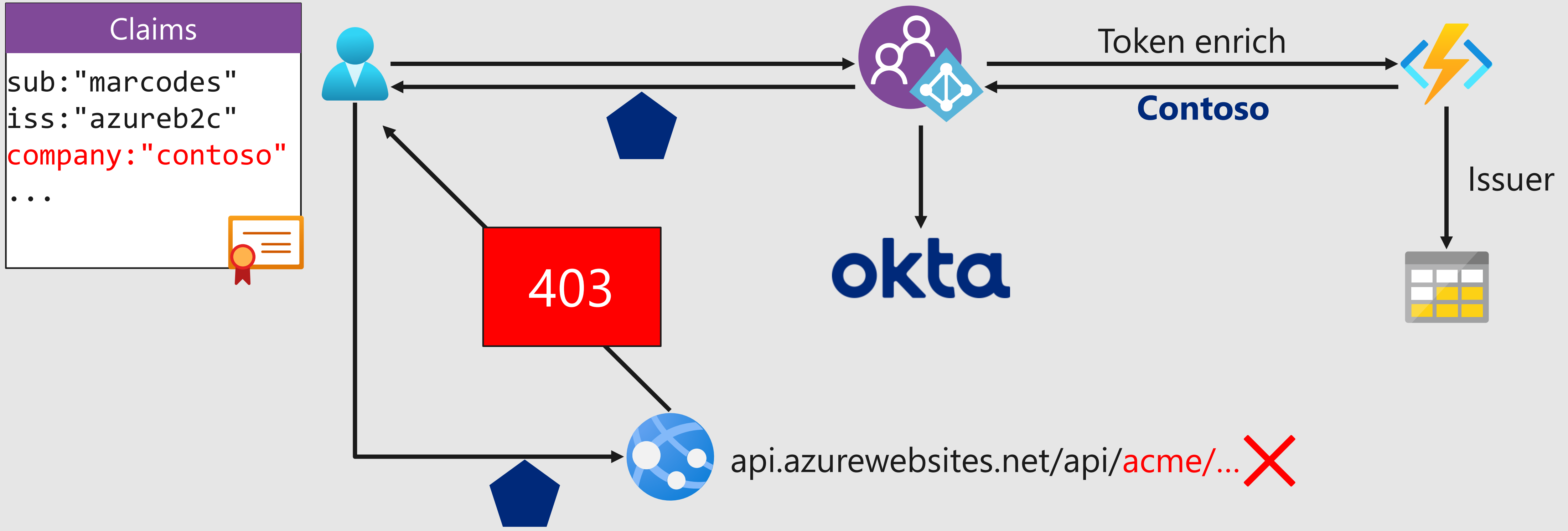
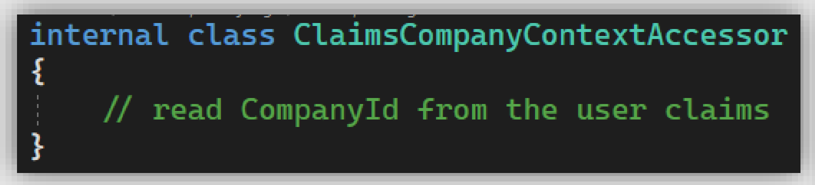
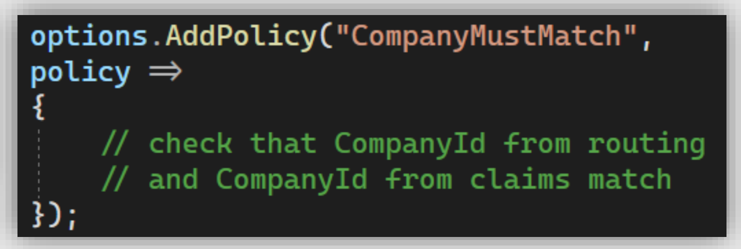
Enterprise-ready security

Enterprise-ready security: ring fencing access control





```
internal class ClaimsCompanyContextAccessor
{
    // read CompanyId from the user claims
}
```



```
options.AddPolicy("CompanyMustMatch",
policy ⇒
{
    // check that CompanyId from routing
    // and CompanyId from claims match
});
```

Recap

- Different data isolation strategies
  - Row Level security
- Subdomain-independent delivery network
- Support for corporate SSO
- Access control in the application
- Creation of a new instance via Graph API

Thank you! ☺

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Get the bits at
https://github.com/cradle77/SaaSDemo