Email Configuration Guide
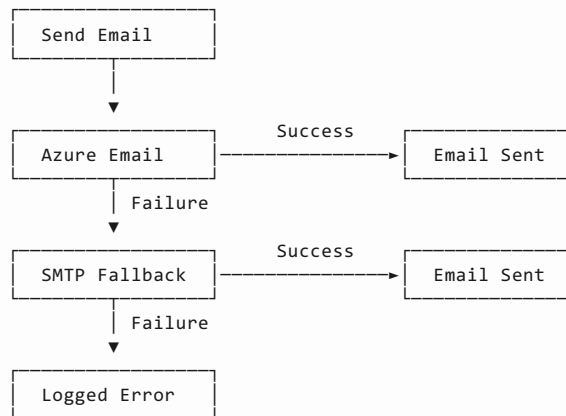
Ape Framework - Email Configuration Guide

Introduction

The Ape Framework uses a dual-provider email system for reliability. Azure Communication Services serves as the primary provider, with SMTP as an automatic fallback. This guide covers configuring both providers.

Email System Overview

Dual-Provider Architecture

```
┌─────────────────┐
│  Send Email     │
└─────────────────┘
         │
         ▼
┌─────────────────┐      Success      ┌─────────────────┐
│  Azure Email    │ ----------------> │  Email Sent     │
└─────────────────┘                   └─────────────────┘
         │ Failure
         ▼
┌─────────────────┐      Success      ┌─────────────────┐
│  SMTP Fallback  │ ----------------> │  Email Sent     │
└─────────────────┘                   └─────────────────┘
         │ Failure
         ▼
┌─────────────────┐
│  Logged Error   │
└─────────────────┘
```

Automatic Failover

- If Azure fails 3 consecutive times, it's skipped for 2 minutes
- SMTP becomes the primary during this cooldown period
- All attempts are logged with provider used and any error messages

Azure Communication Services Setup

Step 1: Create Azure Resources

1. Log in to Azure Portal
2. Create a new **Communication Services** resource:
   - Click "Create a resource"
   - Search for "Communication Services"
   - Click "Create"
   - Fill in:
     - Subscription: Your subscription
     - Resource group: Create new or select existing
     - Resource name: e.g., "ape-email-service"
     - Data location: Select your region
   - Click "Review + create" → "Create"

Step 2: Set Up Email Domain

1. In your Communication Services resource, go to **Email → Domains**
2. Click **Add domain**
3. Choose one of:
   - **Azure managed domain:** Quick setup, uses @azurecomm.net address
   - **Custom domain:** Use your own domain (requires DNS configuration)

For Azure Managed Domain: 1. Select "Azure managed domain" 2. Click "Add" 3. Note the sender email address provided (e.g., `DoNotReply@xxxxxxxx.azurecomm.net`)

For Custom Domain: 1. Select "Custom domain" 2. Enter your domain name 3. Add the required DNS records (SPF, DKIM, DMARC) 4. Verify the domain 5. Add sender addresses (e.g., `noreply@yourdomain.com`)

Step 3: Get Connection String

1. In your Communication Services resource
2. Go to **Keys** (under Settings)
3. Copy the **Connection string** (either primary or secondary)

Step 4: Configure in Ape Framework

1. Log in as Admin
2. Navigate to **System Credentials**
3. Add these credentials:

Key	Category	Value
`AZURE_COMMUNICATION_CONNECTION_STRING`	Email	Your connection string
`AZURE_EMAIL_FROM`	Email	Your verified sender address

SMTP Configuration

SMTP serves as the fallback (or can be used as the primary if Azure is not configured).

Common SMTP Providers

Gmail

```
Server: smtp.gmail.com
Port: 587
SSL: true
Username: your-email@gmail.com
Password: App Password (not your regular password)
```

Important: Gmail requires an "App Password" for SMTP: 1. Enable 2-factor authentication on your Google account 2. Go to Google Account → Security → App passwords 3. Generate a new app password for "Mail" 4. Use this password (not your regular Gmail password)

Microsoft 365 / Outlook

```
Server: smtp.office365.com
Port: 587
SSL: true
Username: your-email@yourdomain.com
Password: Your password or app password
```

Amazon SES

```
Server: email-smtp.us-east-1.amazonaws.com (region-specific)
Port: 587
SSL: true
Username: SMTP username from SES console
Password: SMTP password from SES console
```

SendGrid

```
Server: smtp.sendgrid.net
Port: 587
SSL: true
Username: apikey
Password: Your SendGrid API key
```

Configure in Ape Framework

1. Log in as Admin
2. Navigate to **System Credentials**
3. Add these credentials:

Key	Category	Value
SMTP_SERVER	Email	SMTP server address
SMTP_PORT	Email	Port number (usually 587)
SMTP_USERNAME	Email	Your username/email
SMTP_PASSWORD	Email	Your password/app password
SMTP_SSL	Email	true

Site Name Configuration

Set your site name for email templates:

Key	Category	Value
SITE_NAME	Site	Your Site Name

This appears in email subjects and templates (e.g., "Welcome to Your Site Name").

Testing Your Configuration

Using the Email Test Page

1. Navigate to **Admin → Email Test**
2. Enter a recipient email address

Test Azure: - Click "Test Azure Email" - Check for success message - Verify email received

Test SMTP: - Click "Test SMTP Email" - Check for success message - Verify email received

Checking Email Logs

1. Navigate to **Admin → Email Logs**
2. Find your test emails
3. Verify:
   - Status shows "Success"
   - Correct provider was used
   - No error messages

Email Types in the System

The framework sends these types of emails:

Type	Purpose	Trigger
Confirmation	Email verification	User registration
Welcome	Welcome message	After email confirmed
PasswordReset	Reset password link	Forgot password request
TwoFactorCode	2FA verification	2FA login
ContactForm	Contact submissions	Public contact form
AdminNotification	System alerts	Various admin events

Contact Form Email Recipients

Configure who receives contact form submissions:

1. Navigate to **Admin → Contact Form Settings**

2. Enter email addresses separated by commas:

   admin@example.com, support@example.com, sales@example.com

3. Click **Save**

If no recipients are configured, emails go to the SMTP_USERNAME address.

Troubleshooting

Azure Email Issues

"Connection string is invalid" - Verify the connection string is complete - Check for extra spaces or line breaks - Ensure you copied the full string

"Sender not authorized" - Verify the sender email is verified in Azure - For custom domains, ensure DNS records are correct - Check the domain status shows "Verified"

"Rate limit exceeded" - Azure has sending limits based on your plan - Implement email queuing for high volume - Consider upgrading your Azure plan

SMTP Issues

"Authentication failed" - Verify username and password - For Gmail, ensure you're using an App Password - Check if your email provider requires app-specific passwords

"Connection refused" - Verify server address and port - Check firewall allows outbound on port 587/465 - Try port 465 with SSL if 587 fails

"Certificate error" - Ensure SMTP_SSL is set correctly - Some servers require different SSL settings - Try setting SMTP_SSL to false for testing

General Issues

Emails going to spam - Set up SPF, DKIM, and DMARC for your domain - Use a verified sender address - Avoid spam trigger words in content

No emails at all 1. Check Email Logs for errors 2. Test both Azure and SMTP individually 3. Verify credentials are entered correctly 4. Check firewall/network settings

Best Practices

Reliability

1. **Configure both providers** - Ensures emails send even if one fails
2. **Monitor email logs** - Regularly check for failures
3. **Test after changes** - Always test after updating credentials

Deliverability

1. **Use verified domains** - Configure SPF, DKIM, DMARC
2. **Consistent sender** - Use the same "from" address
3. **Monitor bounces** - Track failed deliveries

Security

1. **Use app passwords** - Don't use main account passwords
2. **Rotate credentials** - Update passwords periodically
3. **Limit access** - Only admins should access email settings

Email Template Customization

Email templates are defined in the `EnhancedEmailService`. To customize:

1. Locate `Services/EnhancedEmailService.cs`
2. Find the relevant method (e.g., `SendEmailAsync`)
3. Modify the HTML template as needed
4. Rebuild and deploy

Common customizations: - Company logo - Color scheme - Footer information - Legal disclaimers

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