

# A01: Escape the **App**ocalypse with IBM App Connect

Andrew Humphreys  
App Integration Offering Management



IBM Cloud



# Please note



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Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

# What is Application Integration For?

*Provides routing and transformation to enable integration of any application and data securely*



# 20 years of innovation

#1 in market share for application  
integration every year since 1999



MQSeries  
Integrator

WebSphere  
MQ Integrator

WebSphere  
Business Integration  
Message Broker

WebSphere  
Message Broker

IBM  
Integration Bus

**IBM**  
**App Connect**



Business transformation is happening across  
a very broad landscape....



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Legacy  
Systems



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Cloud



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Private  
Cloud



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Mobile



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SaaS  
Apps



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Internet  
of Things

## How can we leverage SaaS applications?

“We’re replacing our existing, on-premise CRM solution with Salesforce, running in the cloud, to enhance our client interactions while driving operational and cost efficiencies”

## How can we build digital customer experiences?

“In order to compete in the digital economy, we’re building next generation, digital experiences for our customers – unlocking the value of our existing systems and data”

Agility

Productivity

Efficiency

Competitiveness



# Apocalypse

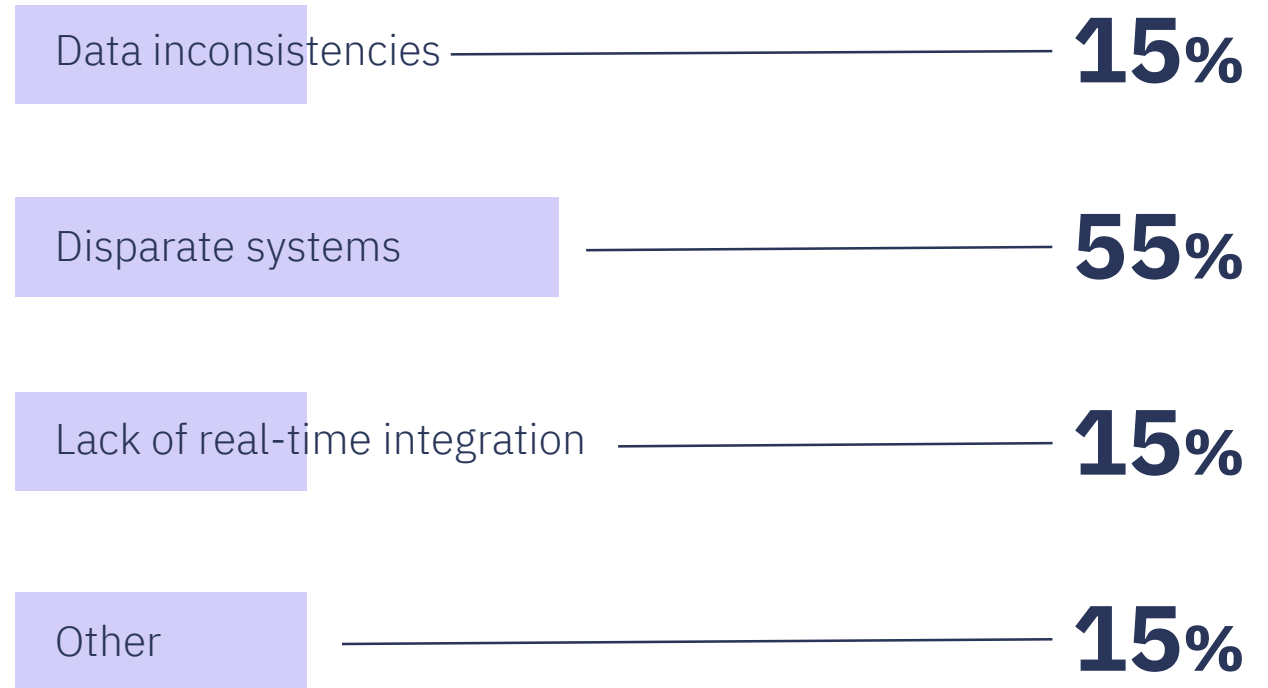


# 84%

Of companies  
fail in their Digital  
Transformation  
objectives

[Source: Forbes](#)

The Cause of an  
Incomplete Customer View  
by Company over 10,000 employees



*\*2017 State of Salesforce Report, Bluewolf, an IBM Company*





How do we

Escape the *Apocalypse*?

*Make it quicker  
and easier to  
build  
integrations*

*Support new  
integration use  
cases, ride the  
iPaaS wave*

*Reduce the  
complexity of  
the integration  
environment*

*Embrace **agile**  
**integration**  
**architecture***

In 2017, in large organizations, at least 65% of new integration flows were developed outside the control of middleware teams.

-Gartner



### Integration specialist

Builds complex integrations across a varied ecosystem.

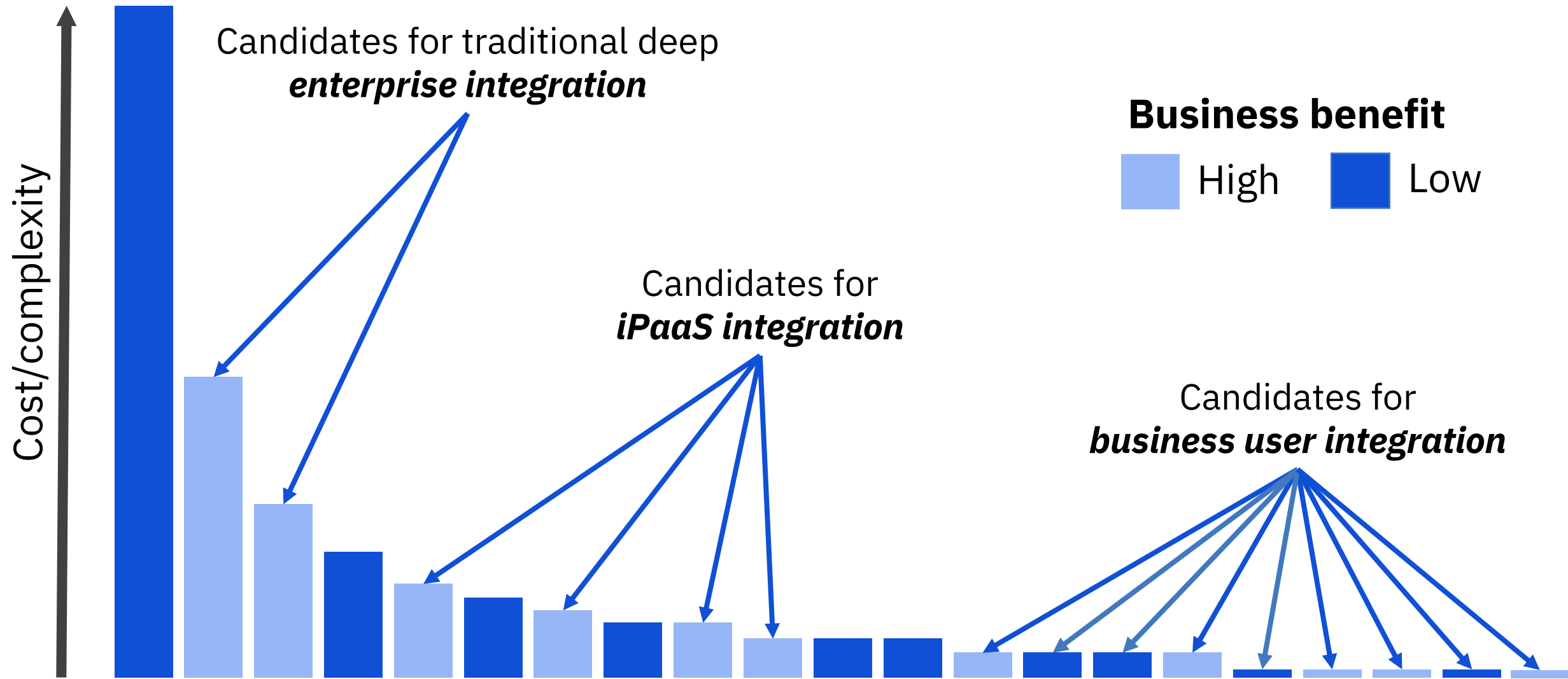
Responsible for managing and securing data, enterprise-wide.

### Application Developer

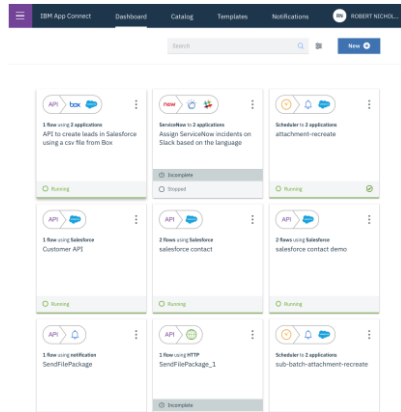
Builds applications that need to access data from across the organisation.

In first instance will look to write code rather than use a tool.

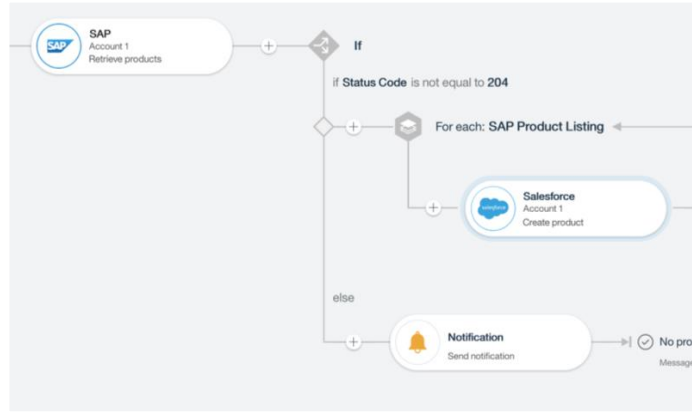
# The long tail of integrations



# IBM App Connect Designer



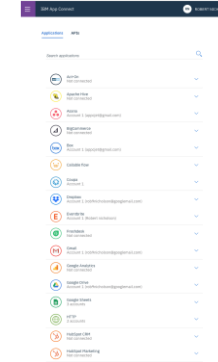
easy, guided, intuitive  
data-driven tooling



for all type of users  
citizen, ad-hoc,  
specialist integrators



increase productivity  
reduce time to market  
increase ROI



scalable, secured  
industry standard &  
all best practices  
baked into the platform

**Leverage SaaS applications**

**Build digital customer experiences**

**Integrate Data**

Transfer data between  
systems and cloud  
applications

**Act on events**

Recognize and respond  
to new events as they  
occur across your  
ecosystem

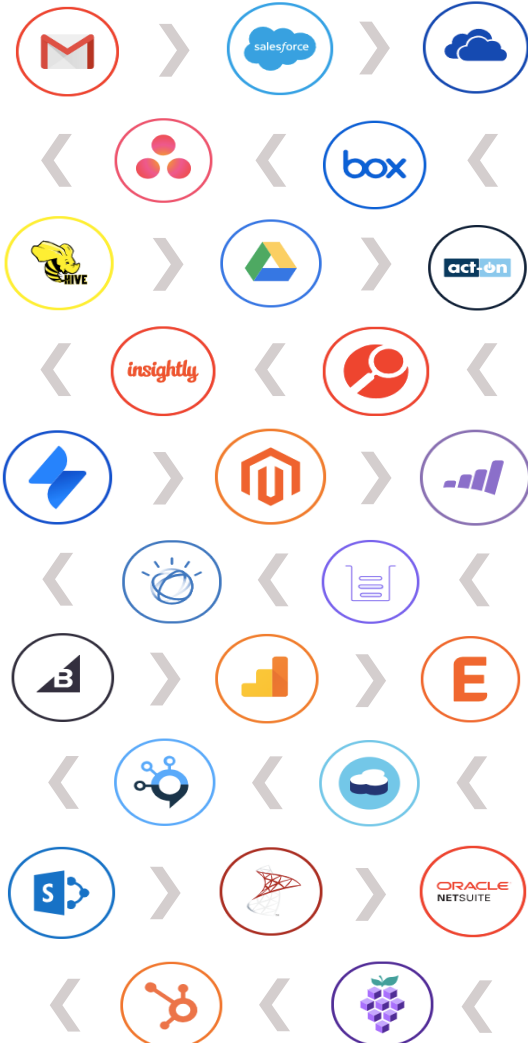
**Build APIs**

Access, transform and  
combine your data to  
expose as APIs





# Connect Applications and Data



## Leverage 100+ pre-built connectors

Sales, HR, CRM, HCM, Finance, Marketing, AI...

## Built-in optimization

- Metadata and business object aware
- Configured to listen and trigger to change events
- Process data in batch/bulk when moving large volume of data
- Robust and resilient to failure with built-in fail-over and retry mechanism

## All SaaS endpoints are included in Enterprise license

Customers get free entitlement to connectors with v11 via a free cloud hosted plan

[Contact AskApplicationIntegration@uk.ibm.com to provision free plan](mailto:AskApplicationIntegration@uk.ibm.com)

## Can't find the connector you need...

Contact offering management to help us understand opportunities you are seeing and get things prioritized

[Contact AskApplicationIntegration for a connector](#)

# Current List of connectors



Act-On  
Not connected



HubSpot Marketing  
Not connected



Jira Service Desk  
Not connected



Salesforce Files  
Not connected



Wufoo  
Not connected



Apache Hive  
Not connected



IBM Cloud Object Storage S3  
Not connected



Magento  
Not connected



Salesforce Libraries  
Not connected



Zoho CRM  
Not connected



Asana  
Account 1 (appcjet@gmail.com)



IBM Cloudant  
Not connected



MailChimp  
Not connected



Salesforce Marketing Cloud  
Not connected

Do you have an application definition file? [Add your application now](#)



BigCommerce  
Not connected



IBM Db2  
Account 1



Marketo  
Not connected



Salesforce Pardot  
Not connected



Box  
Account 1 (appcjet@gmail.com)



IBM Event Streams  
Account 1



Microsoft Dynamics 365 for Sales  
Not connected



Salesforce Service Cloud  
Not connected



Callable flow



IBM Food Trust  
Not connected



Microsoft Office 365  
Not connected



SAP (via OData)  
Not connected



Coupa  
Account 1



IBM MQ  
Not connected



Microsoft OneDrive for Business  
Not connected



ServiceNow  
Account 1



Dropbox  
Account 1 ( [redacted]@googlemail.co.uk)



IBM Watson Campaign Automation  
Not connected



Microsoft SharePoint  
Account 1



SFTP  
Not connected



Eventbrite  
Account 1 (Robert nicholson)



IBM Watson Discovery  
Account 1



Microsoft SQL Server  
Not connected



Slack  
Account 1 (rob\_nicholson@uk.ibm.com)



Freshdesk  
Not connected



IBM Watson Language Translator  
Not connected



MySQL  
Not connected



Stripe  
Not connected



Gmail  
Account 1 ( [redacted]@googlemail.co.uk)



IBM Watson Natural Language Classifier  
Not connected



NetSuite CRM  
Not connected



SugarCRM  
Not connected



Google Analytics  
Not connected



IBM Watson Personality Insights  
Not connected



NetSuite ERP  
Not connected



SurveyMonkey  
Not connected



Google Drive  
Account 1 ( [redacted]@googlemail.co.uk)



IBM Watson Tone Analyzer  
Not connected



NetSuite SuitePeople HCM  
Not connected



Trello  
Not connected



Google Sheets  
3 accounts



InsideView  
Not connected



Oracle Database  
Not connected



Twilio  
Not connected



HTTP  
2 accounts



Insightly  
Not connected



Salesforce  
5 accounts



Web Crawler Beta  
6 accounts



HubSpot CRM  
Not connected



Intacct  
Not connected



Salesforce Commerce Cloud Digital Data  
Not connected

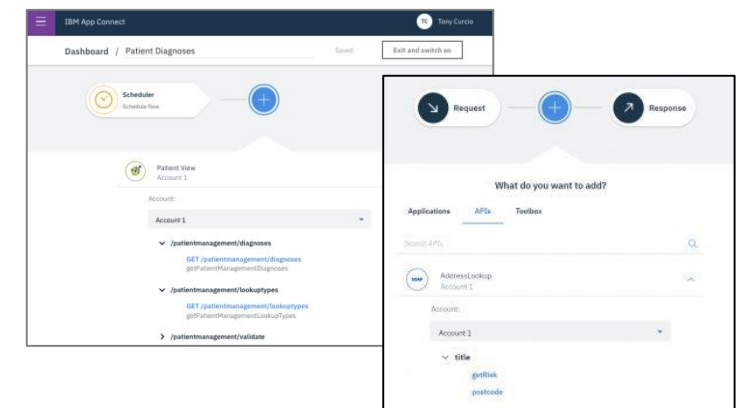
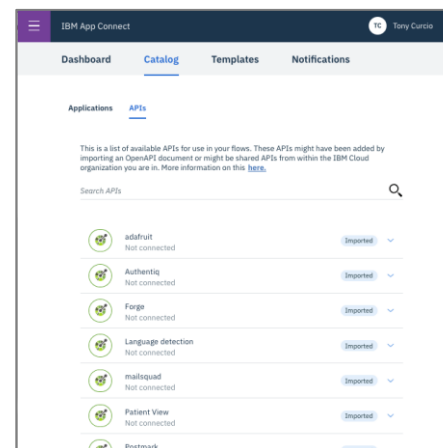


WordPress  
Not connected

# Extend the reach of your connectivity



- Simplest means to register new endpoints .... supply an OpenAPI or WSDL file and give your “connector” a name and a description
- Connect securely to endpoints public/private, in cloud/on premise
- Onboard your org’s APIs, SaaS/Software (like [IBM Maximo](#) ) or take advantage of online libraries like [apis.guru](#) to expand the org reach to 1000s of endpoints
- Once imported, these APIs can be easily added to any integration



# Act on events

- New events are taking place across the organization:
  - New sales order
  - New marketing lead
  - Customer complaint
- Reacting to these events, in real-time, enables organizations to capture new opportunities and provide enhanced customer experiences
- Building workflows ensures that the right-follow on action is taken
- Capturing information about the event enables teams with the context to apply it to react quickly

**“Customers expect organizations to respond to events as they occur in real time”**

Gartner

# Data Copy – optimized batch workloads

## High Throughput

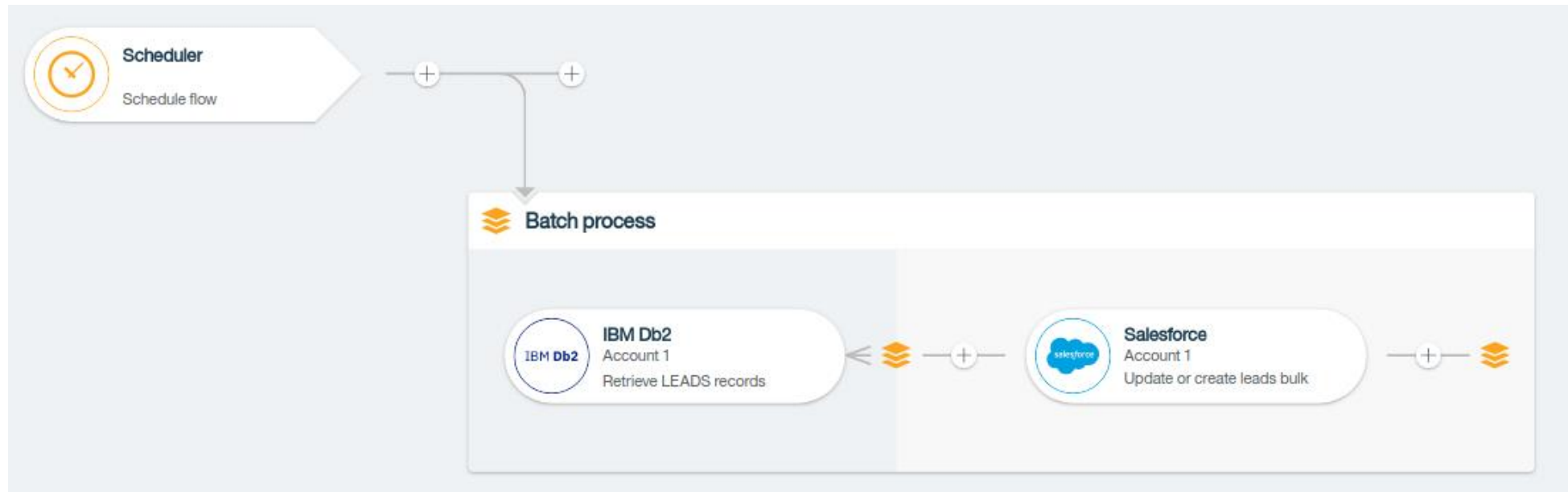
horizontally scaled engine  
with no fixed limits – can use  
1000s engines in parallel

## Smart connectors

system is frugal with API calls  
using REST or Bulk APIs as  
provided by endpoint

## Enrich data

allows interacting with  
multiple endpoints within  
any batch process





# Building APIs – the challenge

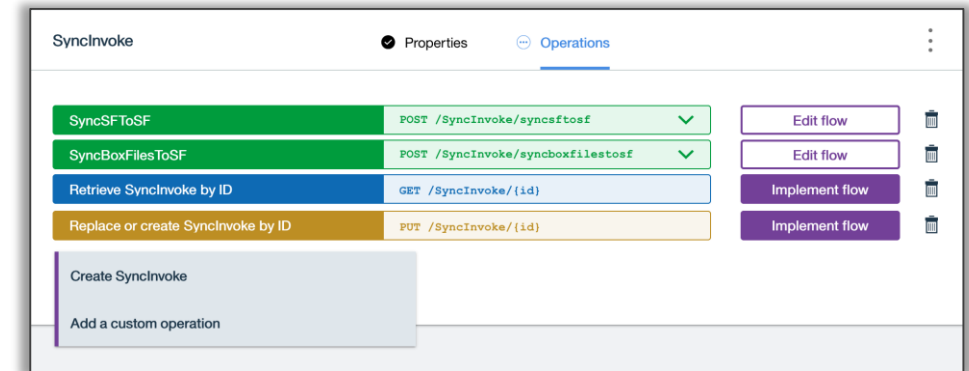
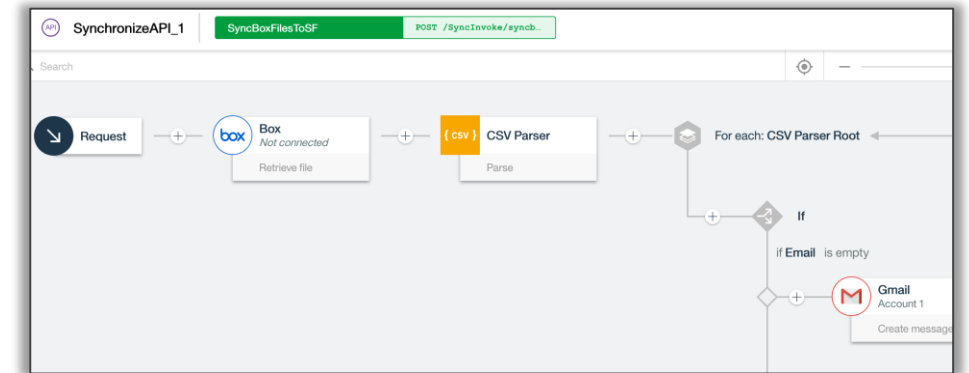
- APIs enable developers to create services which deliver a highly personalized, accurate and relevant customer experience
- However, this data exists in a myriad of endpoints – from legacy critical business systems to more modern, innovative applications
- These endpoints don't always exist as accessible interfaces
- Integration bring this data together and exposes it in a way that's easily consumable and conforms to industry standards

**“APIs are the windows to new ecosystems - they allow firms to expand into markets they may never have previously considered”**

Harvard Business Review

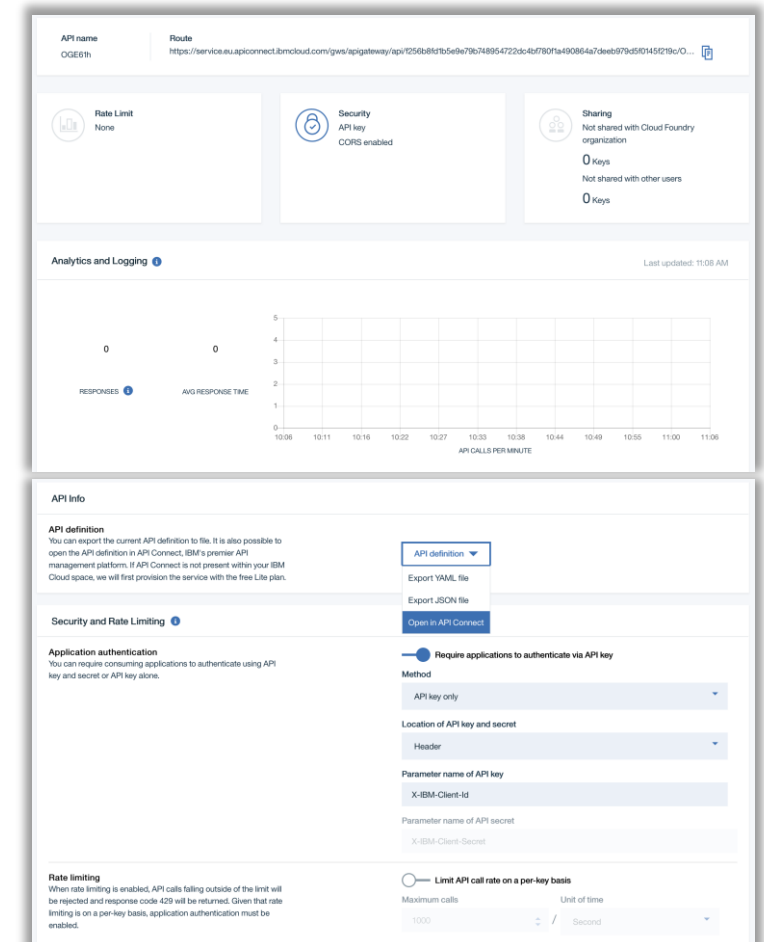
# Build your APIs in minutes with App Connect

- Easily build resource centric APIs through a model-driven approach, without the need to code
- Extensive connectivity to reach data from any system or endpoint
- Define the operations for the API:
  - define models using connector metadata
  - define CRUD and custom operations for your models implemented as flows
  - define nested and array data for your API request/response
  - generate the proper metadata on the flow request / response endpoints to align
  - Automatic Open API doc generation
- Expose as a well-formed, REST API – ready to share with development teams



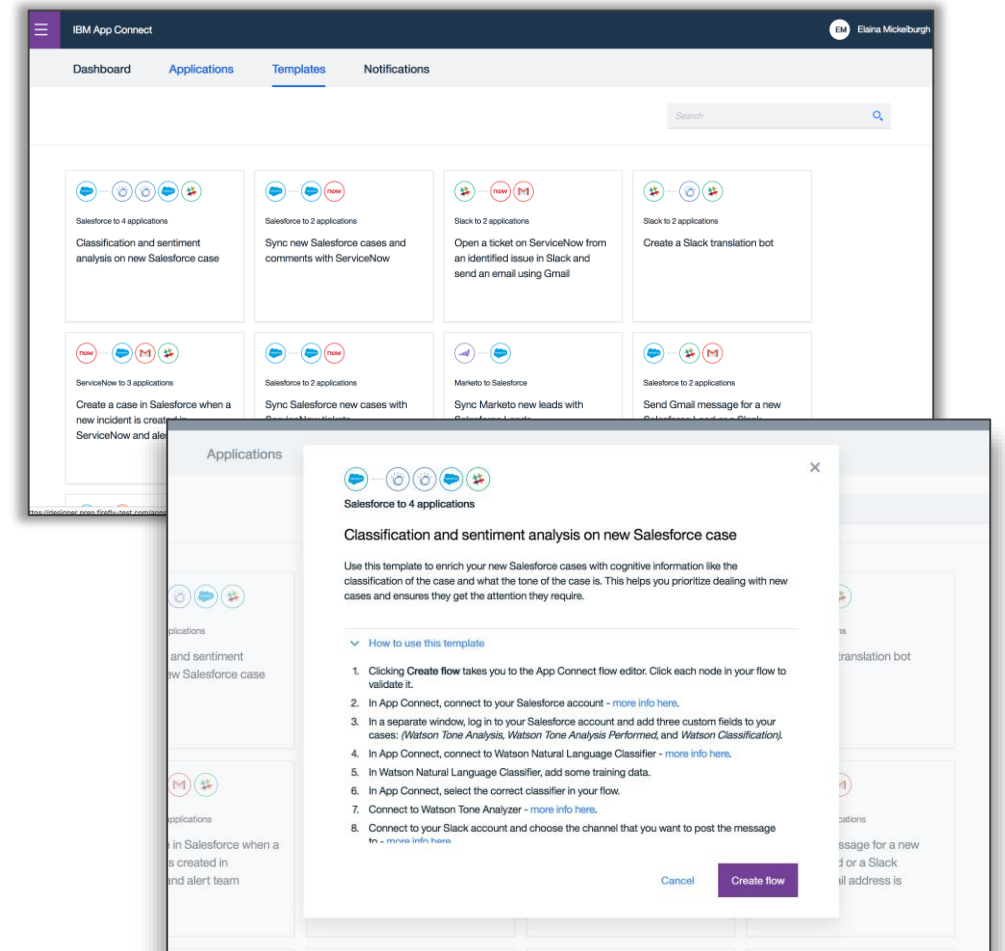
# Manage your APIs

- Embedded IBM API Connect functionality allows users to apply basic management
- For advanced management and socialization, publish APIs to the IBM Cloud Catalog and utilize IBM API Connect
- Consume APIs in App Connect from API Connect catalog
- Download the OpenAPI doc to use with development teams
- Automated sync between flow metadata and model definition as changes to the model or flow occur



# Templates to accelerate flow creation

- 50+ Pre-built, end-to-end flows for real world use cases
- Support for cognitive, marketing, sales, support, business ops, e-commerce, finance use cases
- Includes key connectors: Salesforce, SAP, Netsuite, Watson, MS Dynamics, Marketo etc.
- Easy to use templates catalogue embedded within App Connect



# IBM App Connect Designer – Find Out More

Session	Date & Time	
A08 – What's new in App Connect Designer	Wednesday, 10:50-11:45am	White Pine 1
A09 – App Connect Smart Connectors	Wednesday, 1:00 - 1:55pm	White Pine 1
A10 – Using App Connect for Batch Processing	Wednesday, 2:00 - 2:55pm	White Pine 1
A13 – App Connect Ask me Anything	Thursday 10:50-11:45am	White Pine 1





How do we

Escape the *Apocalypse*?

*Make it quicker  
and easier to  
build  
integrations*

*Support new  
integration use  
cases, ride the  
iPaaS wave*

*Reduce the  
complexity of  
the integration  
environment*

*Embrace **agile**  
**integration**  
**architecture***

Overall integration “surface area”

Customers

Business Partners

Enterprise Ownership Boundary

SaaS  
applications

Applications on public  
cloud

Applications on Virtual  
Private Clouds

Application

“Islands” of compute connected  
by “bridges” of integration

Applications on  
Private Clouds

# Enterprise IT Pain Points

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Current **integration portfolio is bloated.**

Unprepared to support the **increasing shift to cloud-centricity** and to **enable digital use cases**

**No single point of accountability for integration**, and integration delivery by specialists only **hinders ability to scale capability**

An absence of strong centralised governance has led to **overlapping integration platforms**, a lack of interoperability and limited reuse

# What is required for new app integration solutions?

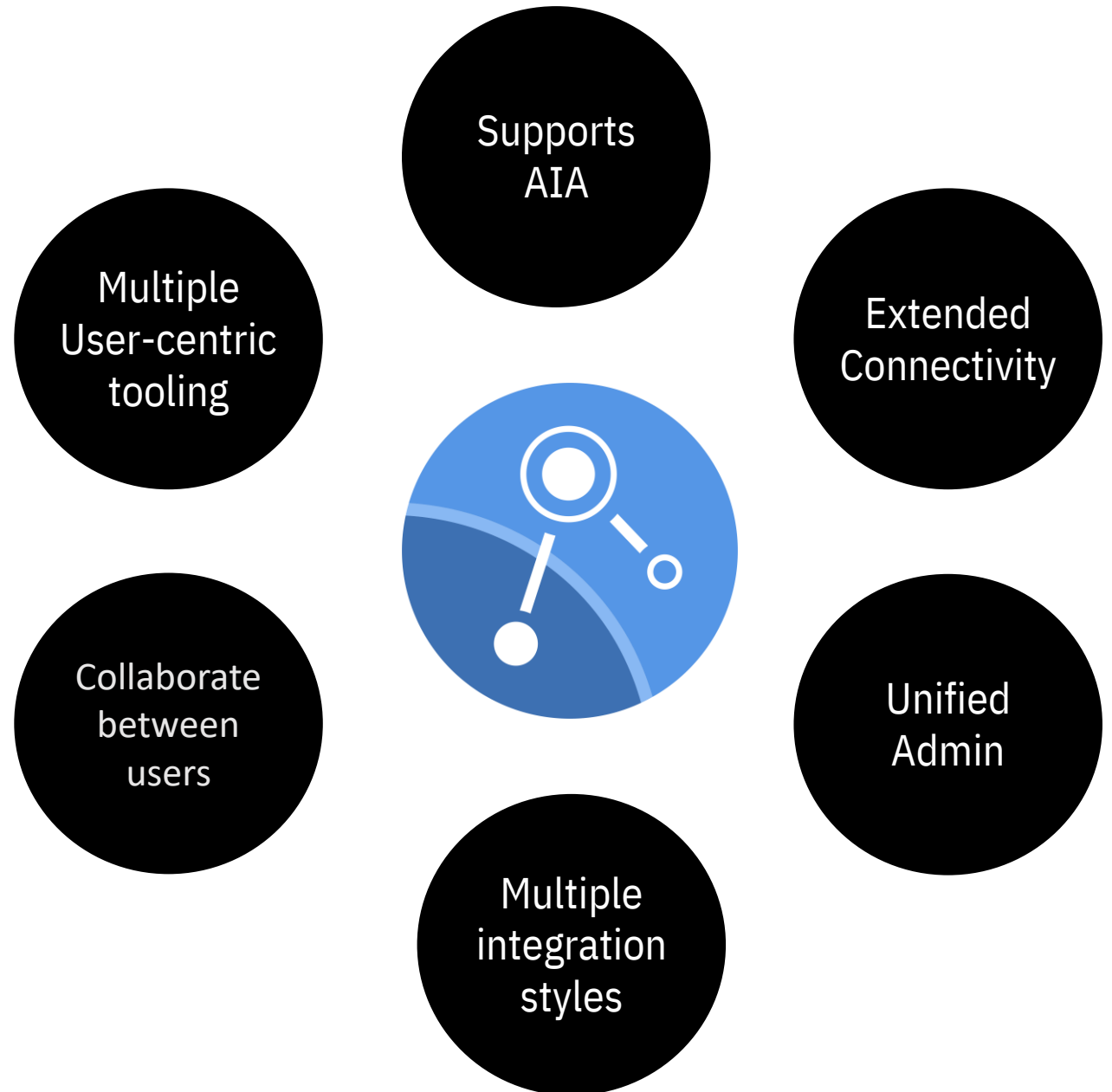
1. **Eliminate custom coding** – application expansion increasing, as is the need to connect any system with even smarter configuration-based tools
2. **Support diversity of users** – enable non-coders and core ESB developers so that everyone can innovate faster while controlling costs
3. **Operational insight** – understand the performance of transactions across the integration capabilities for the systems that your connect with
4. **Run everywhere, securely** – Deploy cloud-native integration runtimes and tackle challenging SSL, encryption and security topics in an agile fashion

# IBM App Connect Enterprise

## Key capabilities to solve your app integration challenges

Combines the existing, industry-trusted **IBM Integration Bus (IIB)** technology with new cloud native Designer technologies

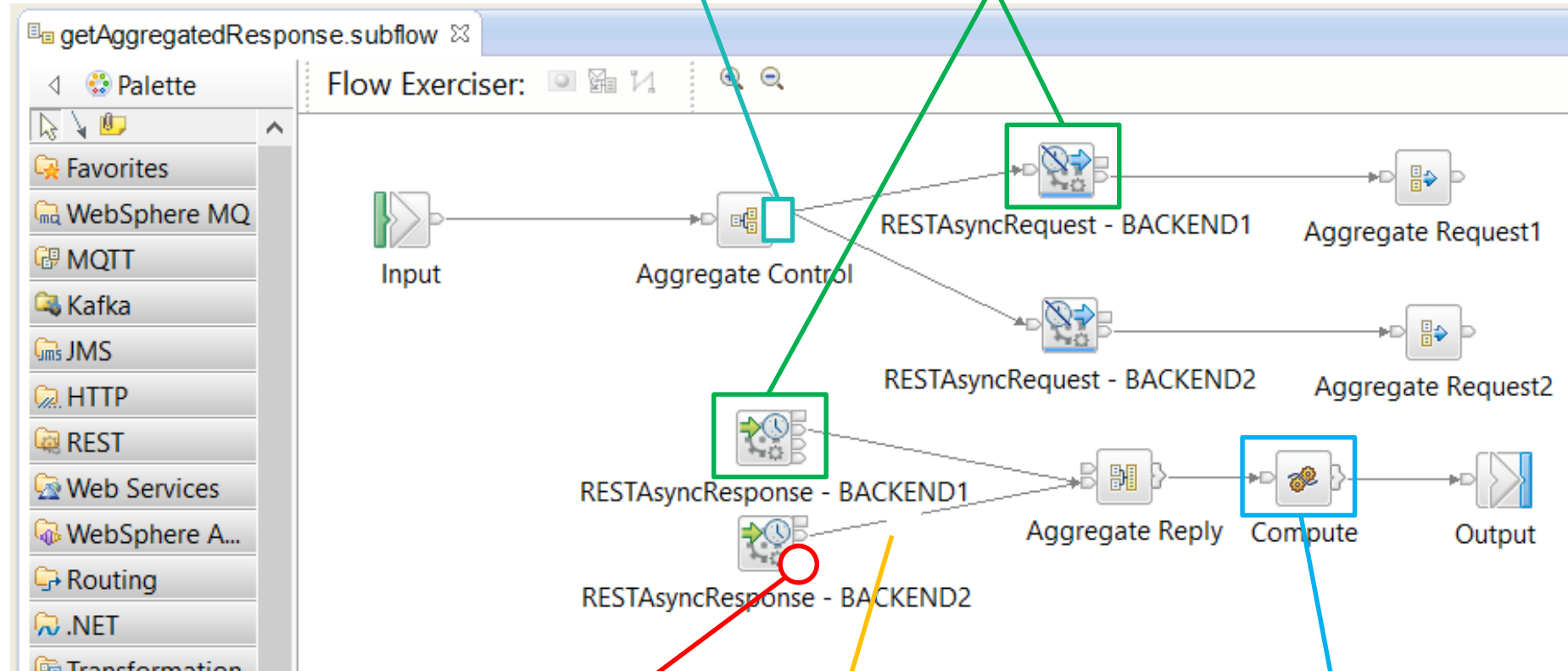
Supports a breadth of integration needs across a modern digital business





Multiple Terminals on a message flow node

Thread switching

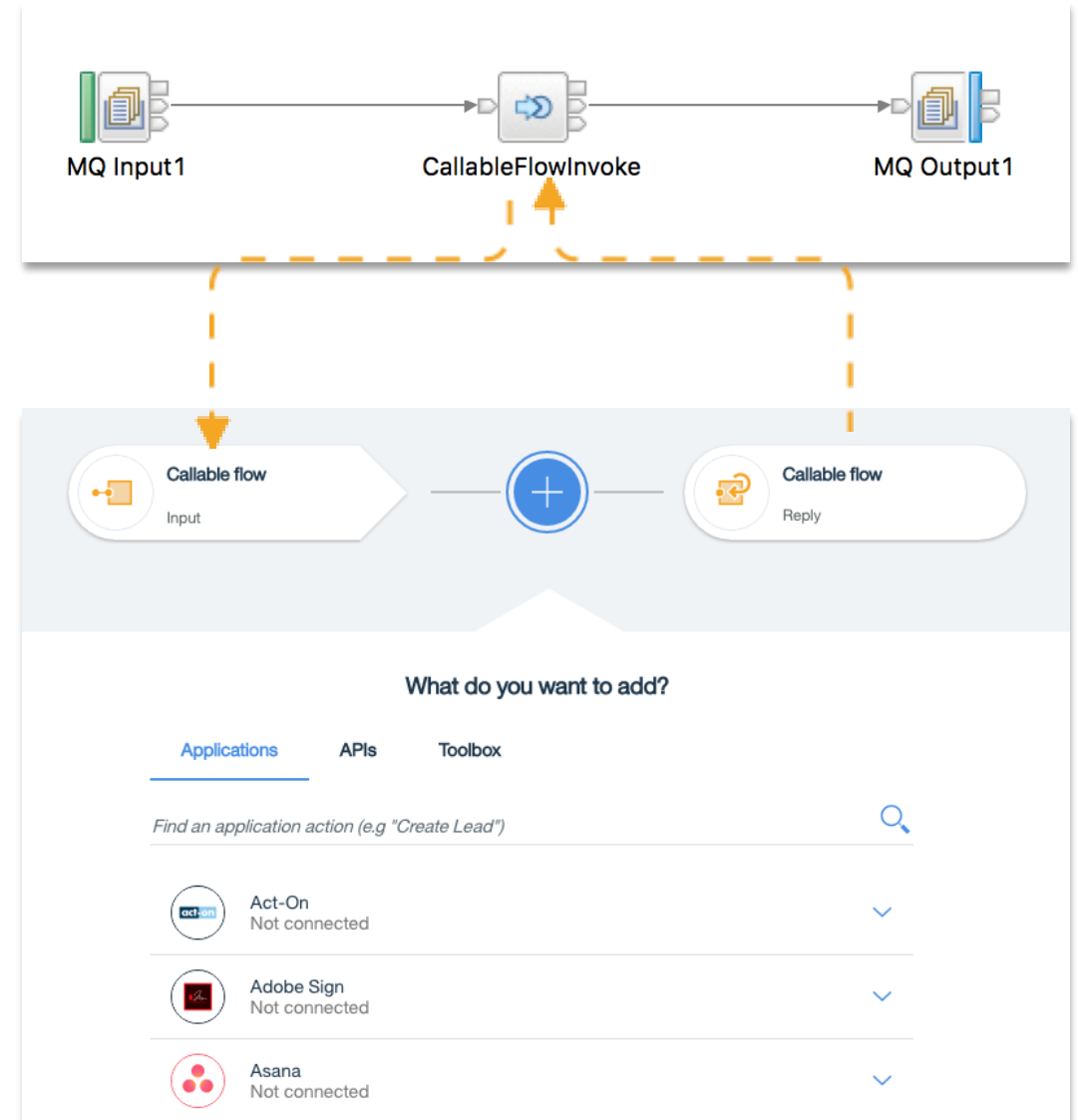
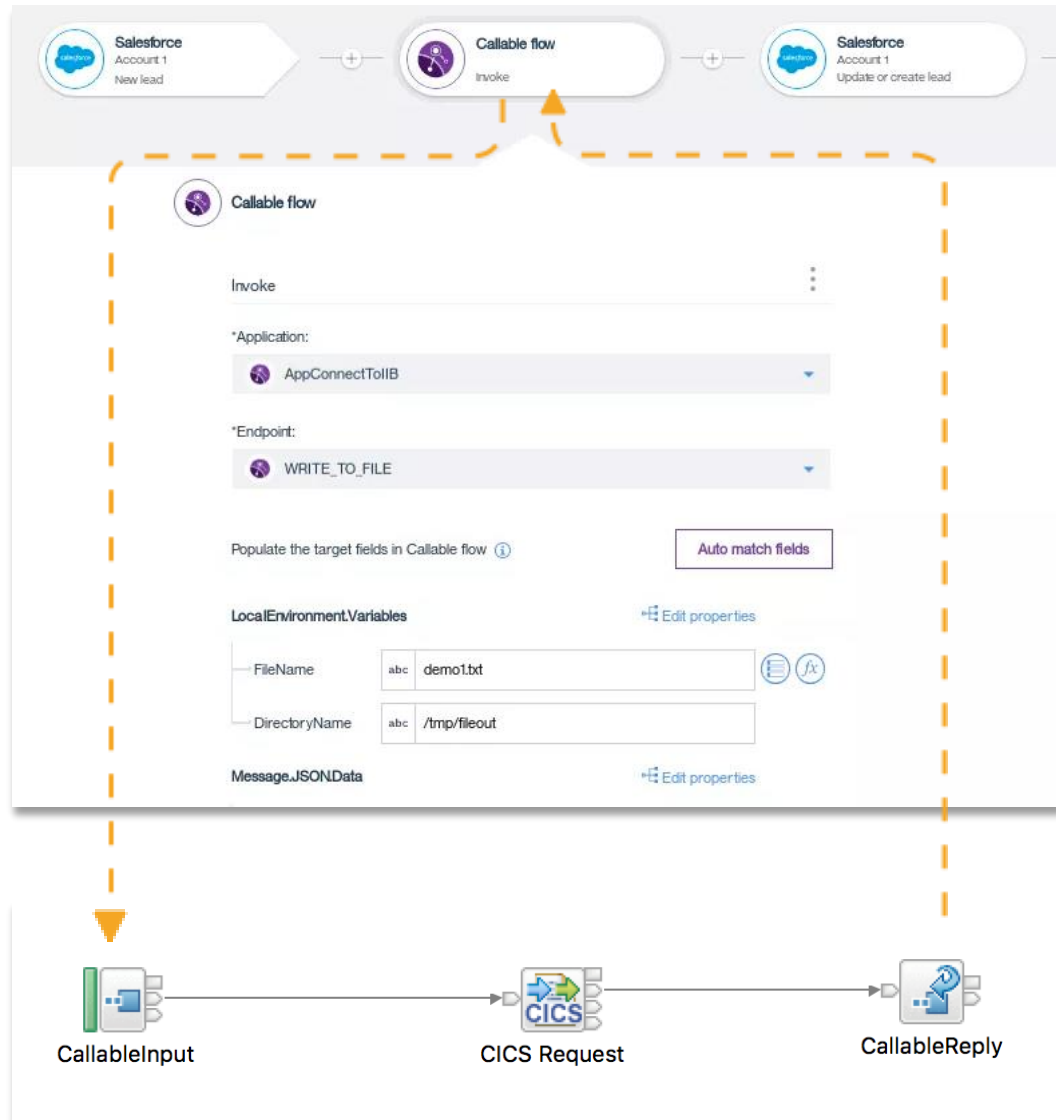


The Try / Catch concept

Code versus Configuration

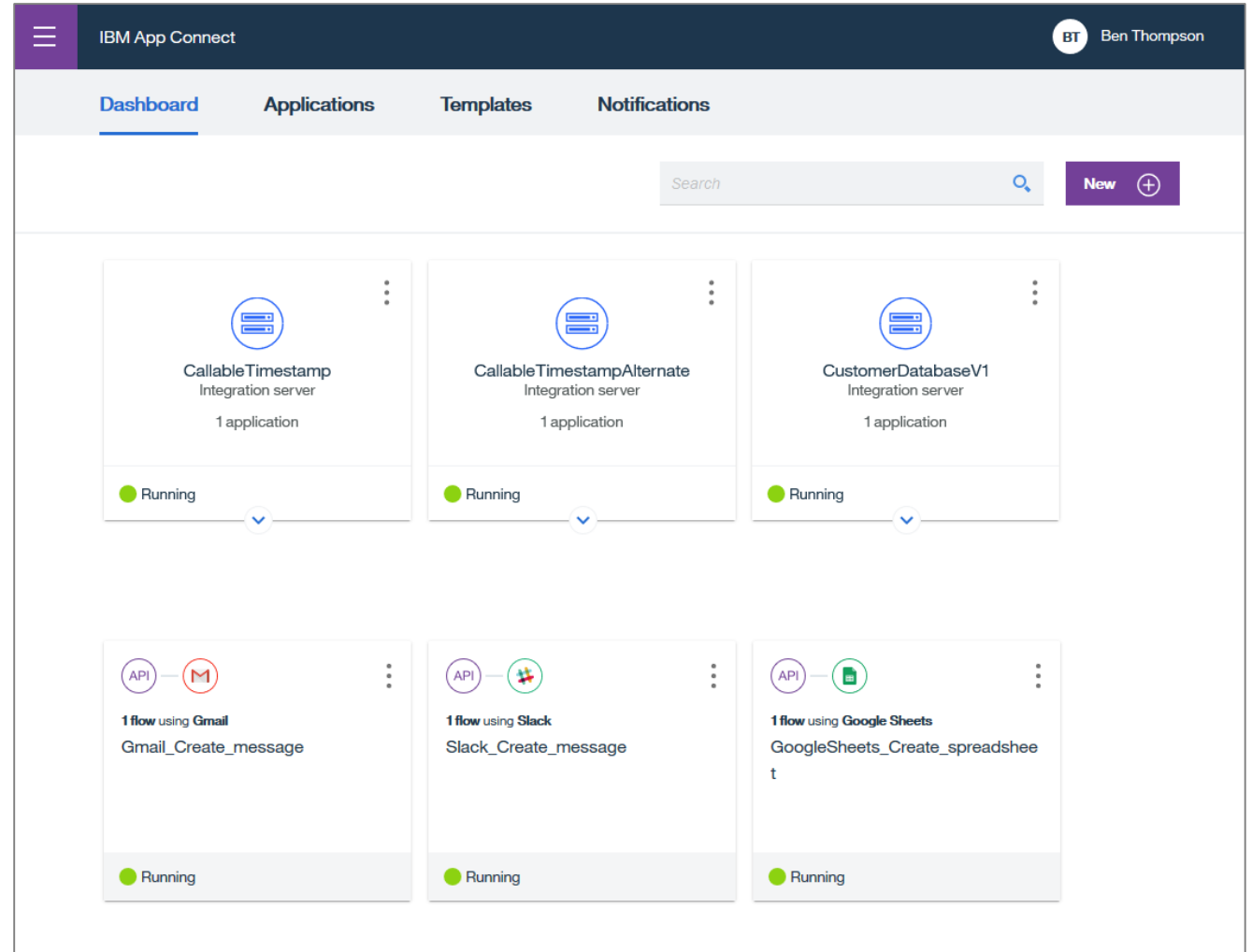
Message Domains / Strong typing

# App Connect Enterprise – callable flows



# App Connect Enterprise – Integrated Dashboard

- A single, merged dashboard to manage integration assets
- **Integration servers** containing:
  - IIB Applications
  - IIB REST APIs
  - IIB Integration Services
  - IIB Shared Libraries
- **App Connect runtime**
- Event driven flows
- APIs flows
- Batch flows
- A single monitoring dashboard
- A common mgmt CLI & API



# Integration Strategies are changing

“ Integration has become an obstacle to success because traditional, centralized and systematic integration approaches cannot cope with the volume and pace of business innovation. ”

“ A **single ESB** may create bottlenecks in the organizations agility ”

# Agile integration architecture

Using lightweight integration runtimes to implement a container-based and microservice-aligned integration architecture

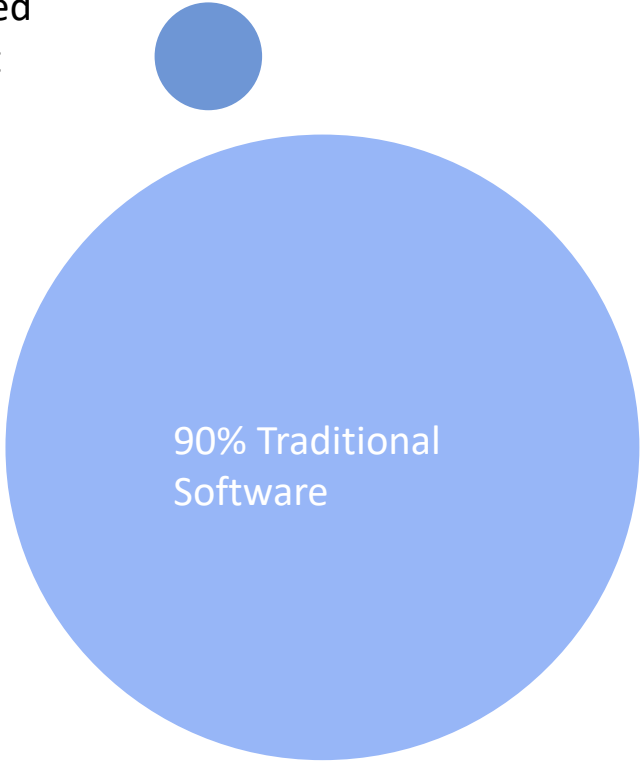


<http://www.ibm.com/cloud/agile-integration-architecture>

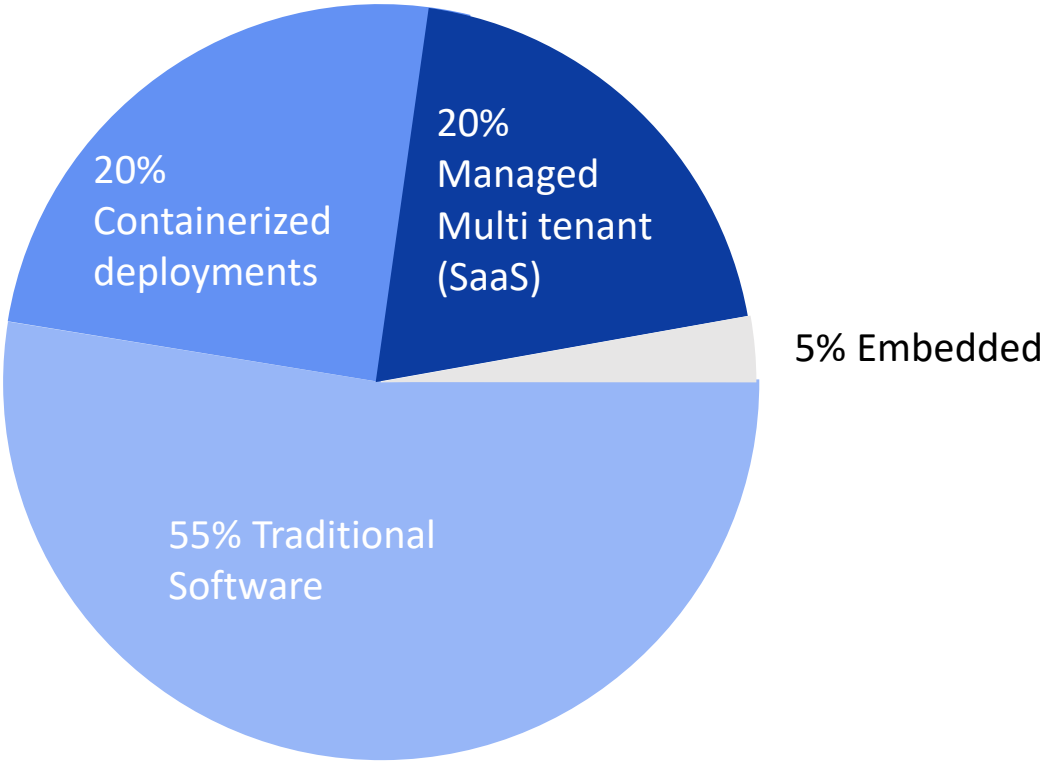


# Changing conversations with our clients

10% Managed  
Multi tenant  
(SaaS)



yesterday

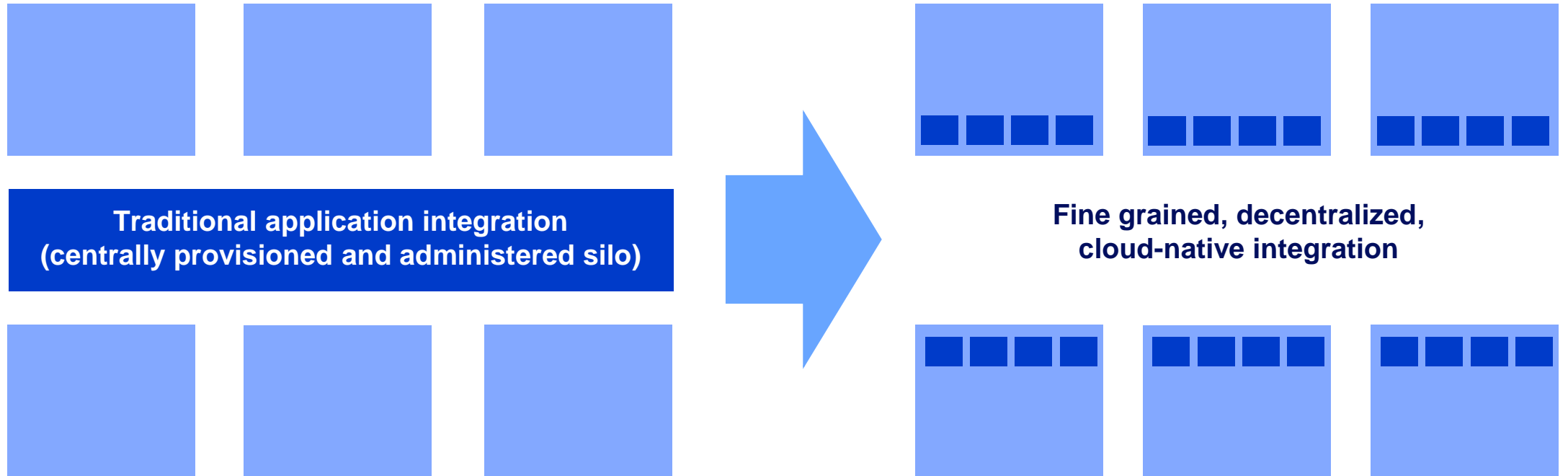


today



# Integration modernization

## Integration deployment perspective



How much do you uniquely need to know for each stack?  
*What if we could ensure that the only unique skill was artefact creation?*

Operations	Operations	Operations	Operations	Operations
Deployment	Deployment	Deployment	Deployment	Deployment
Build	Build	Build	Build	Build
Artefact Creation	Artefact Creation	Artefact Creation	Artefact Creation	Artefact Creation
Security	Security	Security	Security	Security
Installation	Installation	Installation	Installation	Installation
Resource allocation	Resource allocation	Resource allocation	Resource allocation	Resource allocation

How much do you uniquely need to know for each stack?  
*What if we could ensure that the only unique skill was artefact creation?*

Operations	Operations	Operations	Operations	Operations
Deployment	Deployment	Deployment	Deployment	Deployment
Build	Build	Build	Build	Build
Artefact Creation	Artefact Creation	Artefact Creation	Artefact Creation	Artefact Creation
Security	Security	Security	Security	Security
Installation	Installation	Installation	Installation	Installation
Resource allocation	Resource allocation	Resource allocation	Resource allocation	Resource allocation

# AIA

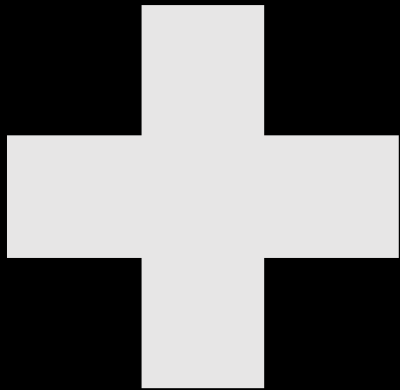


# ESB

## IBM App Connect

- **Architecture freedom**  
1st application integration technology to support both ESB and AIA
- **Consistent support**  
Integrations can run as-is without any changes
- **Lightweight & modern**  
Optimizations for containers and kubernetes deployment

# iPaaS



# Enterprise Integration

- Speed the adoption of SaaS apps
- Empower new user communities

- **Enterprise features on Cloud**

The enterprise class runtime available as part of the iPaaS to support integration experts

- **Linked environments**

Callable flow technology allows for integration flows to be invoked across the hybrid landscape

- **Remote connector execution**

Cloud to ground Agent, Invoke cloud connectors from software

- Continues to power the core systems
- Also tied to success of new tech

# App Connect Enterprise

## Extended Connectivity

- Expanded set of connectors across Cloud services, SaaS applications, Cloud platforms, and existing on-prem applications

## Multiple integration styles

- Flexible support for the range of integration styles from APIs, Events , SOA and Batch through a simplified development experience

## Collaboration across users

- Simple tooling for all styles of users that work together to expose, orchestrate, and curate data from enterprise systems

## Flexible deployment and management

- Shrinks the engine size and removes the managing integration node so that an integration flow can participate in a microservices/container-based architecture

# IBM App Connect Enterprise – Find Out More

Session	Date & Time	
A02 – What’s new in App Connect Enterprise	Tuesday, 10:50-11:45am	White Pine 1
A03 – All things HTTP inside ACEv11	Tuesday, 1:00 - 1:55pm	White Pine 1
A04– Administering ACEv11	Tuesday, 2:00 - 2:55pm	White Pine 1
A05 – Keeping ACE v11 fed and watered	Tuesday, 3:10-4:05pm	White Pine 1
A06 – Running App Connect in Containers	Tuesday, 4:10-5:05pm	White Pine 1
A07 – Becoming and integration ace with App Connect Enterprise	Wednesday, 9:50 - 10:45am	White Pine 1
A11 – How to tame your hybrid cloud with App Connect	Wednesday, 3:10-4:05pm	White Pine 1
A12 – Ready for REST? Using App Connect with REST APIs	Wednesday, 4:10-5:05pm	White Pine 1
A13 – App Connect Ask me Anything	Thursday 9:50-10:45am	White Pine 1
A14 – Building Healthcare Integration solutions with App Connect and ITX	Thursday 10:50-11:45am	White Pine 1
A15 – Best practices for using ITX Maps in App Connect	Thursday 9:50-10:45am	Red Oak



# Agile Integration Architecture – Find Out More

Session	Date & Time	
E01- The evolving story for Agile Integration	Tuesday, 1:00 - 1:55pm	Black Oak
LAB– AIA with App Connect Enterprise (Instructor led lab)	Tuesday, 2:00 - 2:55pm	Mesquite
E09 – Modern Integration Patterns	Wednesday, 3:10-4:05pm	Black Oak
E08 – Deploying Integration Solutions in Kubernetes	Thursday 9:50-10:45am	Black Oak
E10 – Scaling Integration	Thursday 10:50-11:45am	Black Oak

# 2019 App Integration Strategy

Our vision is for App Connect to be a **single product** with Professional and Enterprise tiers that can be purchased as software, installed and managed by the customer, or as a cloud service, managed by IBM.

- *Ensure App Connect operates seamlessly in the IBM Cloud Integration Platform providing consistency of development, administration and operation of our key integration capabilities (app integration, API lifecycle, messaging, gateway, and high-speed transfer).*
- *Enhance App Connect Enterprise to support full migration from IIB, and leverage the enterprise features of ICP where they choose AIA as their preferred architecture.*
- *Extend App Connect cloud service capabilities to support demand for more use cases for enterprise iPaaS including connectivity to on-premise applications such as SAP, files or databases*
- *Continue to blend App Connect software and service into a single, hybrid solution, enabling Designer authored integrations to run in software*

# ACE v11 Completion Platforms

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## Platforms

Q1      zLinux  
Q2      AIX, pLinux

*With expanded platforms coverage and bringing other priority features to v11, the large majority of customers will be able to upgrade by end of Q1.*

## Upgrade

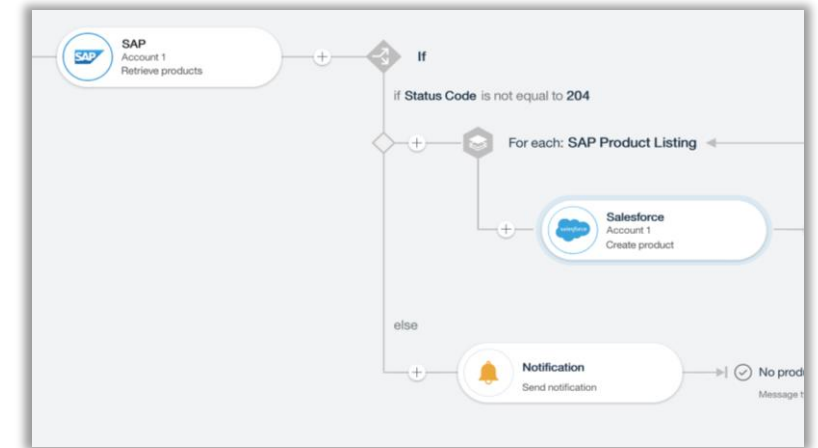
- Global Cache
- Redeploy of Policy Projects
- LDAP authentication
- Monitoring and Stats sticky settings.
- Bulk Push REST API to APIC from Web UI
- Record and Replay

# App Connect Agent for complex on-premise endpoints

*Cloud Service leverages Integration Server to provide connectivity to complex endpoints*

A tethered, on-premise 'connector-host' for on-premise connectivity

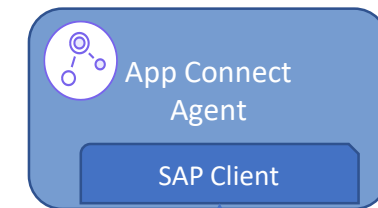
- **Productivity** - build flows in Designer using the simple experience
- **Synergy** - On premise can be either existing ACE instance or a "black box" agent version
- **Locality** - Allows Logic to be run close to on-premise endpoint
- **Security** - Satellite makes a secure connection to App Connect in the cloud
- **Managed** - the Satellite is fully controlled, managed and monitored by App Connect on Cloud



Managed Service

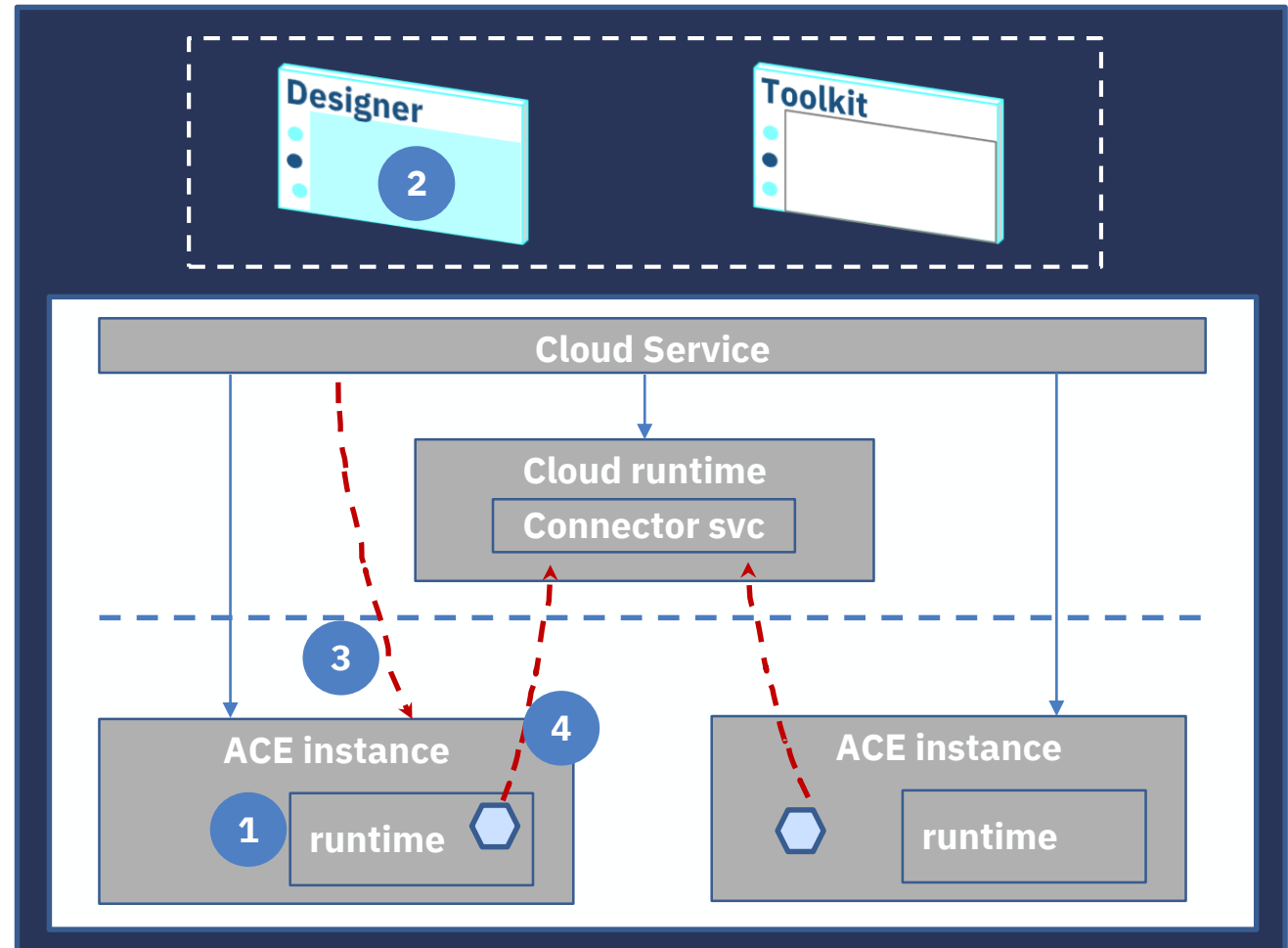
Enterprise

Firewall



# Designer flows running on premise

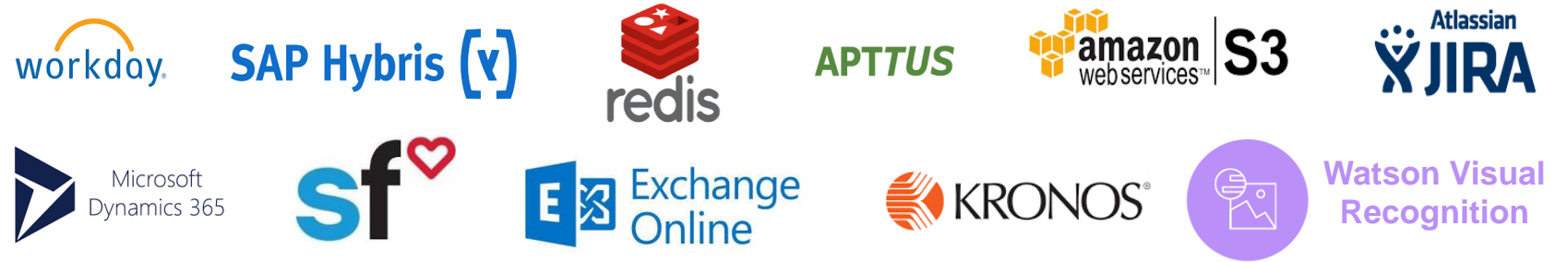
1. Firefly runtime components for APIs available on premise in the ACE software
2. User logs into Cloud Service and builds an App Connect flow in the Designer UI
3. User can push that flow to the onpremise runtime (via import/exp), including in CIP
4. At runtime, orchestration runs on premise and can access connectors on cloud





## More connectors

New connectors released regularly. 1H includes....



## More features

Connectors recently expanded to include discrete update and delete operations. Custom SQL coming this quarter

## Connector Service

2Q'19

A standard OpenAPI spec for interacting with the metadata discovery and the runtime for any of the smart connectors. Will facilitate integration of our connectors with other IBM and partner products ... or custom apps that customers want to build.

What would making the job of debugging an integration easier?

“Integrate testing/debugging inside of the UI so you can test your integrations (very important)”

“Alerts”

“Ability to quickly identify the bad data in the input message.”

“Point to the root cause of problems right away”

“Look at the before and after messages”

“Easy tracing”

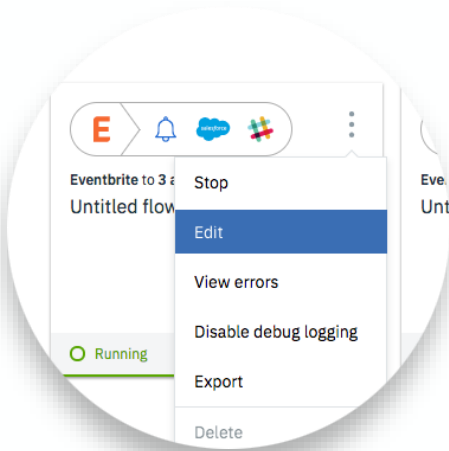
“Run time available for testing all in dev environment itself”

“Must be clear info of the error inc the full error details”

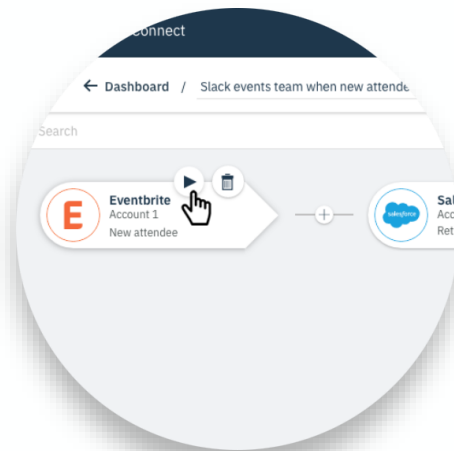
“Quickly identify problem and drill down to root cause of problem”



# Connected incremental flow development



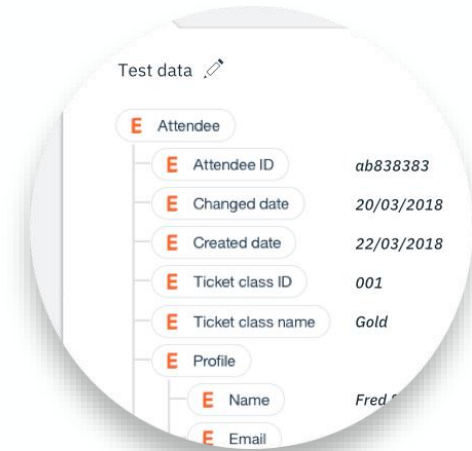
Seeing a running flow



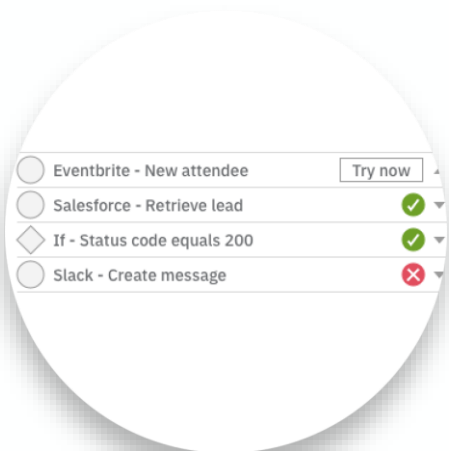
Quick test runs



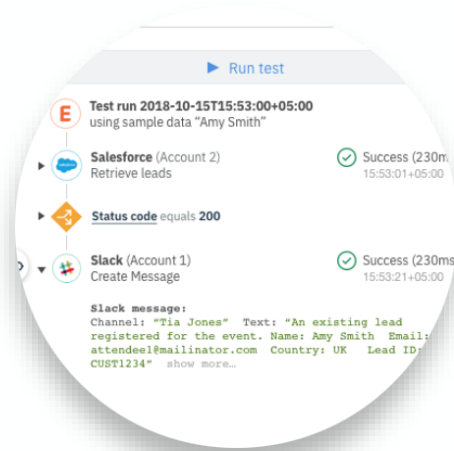
Seeing the route



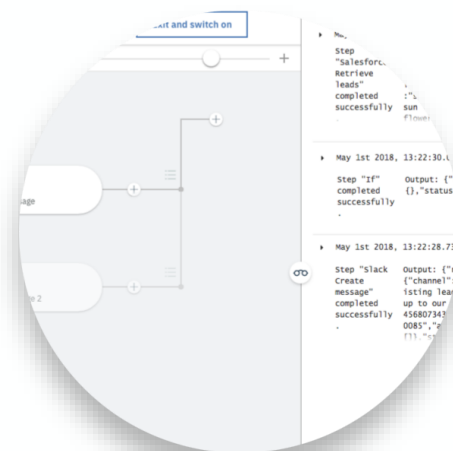
Edit real test data



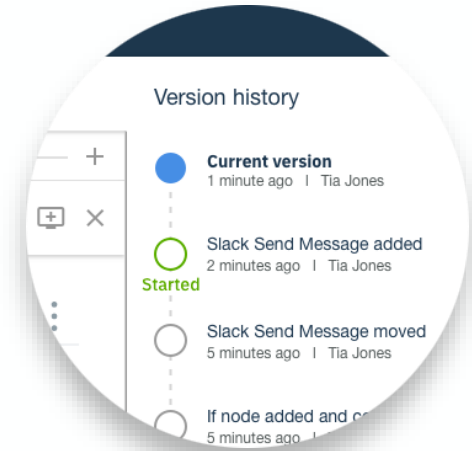
Instantly find issues



Insight into each step



Logs in context



Version history

# “First 3 built for free”

For a limited time, new customers can take advantage of this great program that helps them get a jumpstart on delivering real business value

## Expert

One of our App Connect engineers will work directly with you

## Value

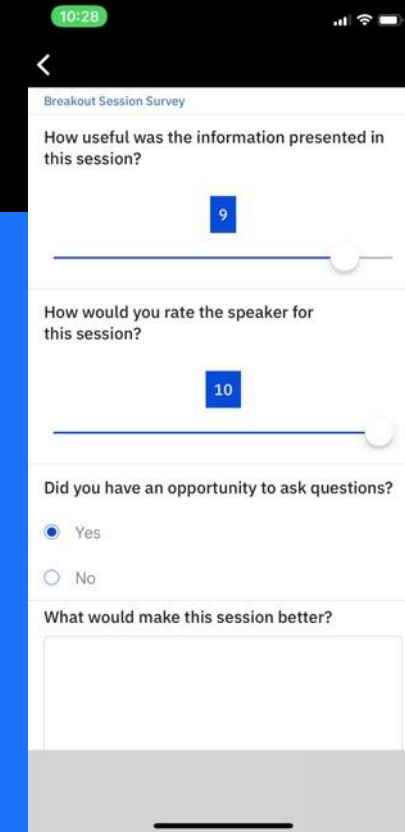
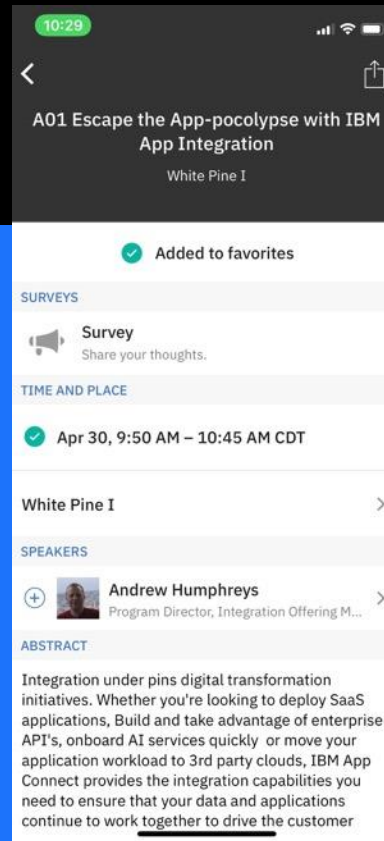
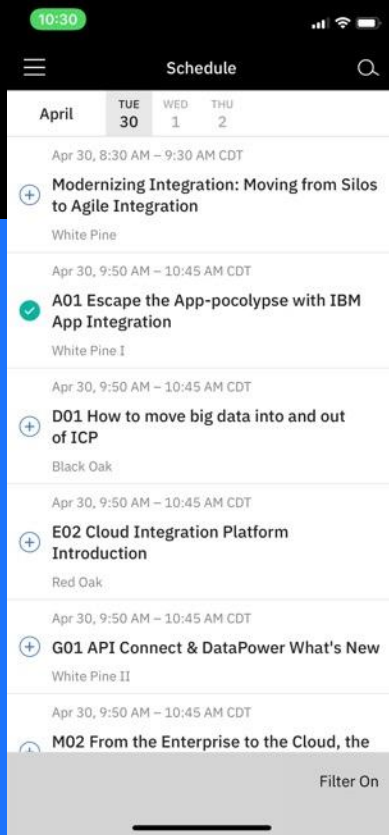
These experts will first listen to your requirements and ensure we understand the value you need to deliver to your business

## Learn

They will then work with you over web conference and show you step by step just how simple building an integration flows can be

## Flexible

Meeting times can be scheduled to best suit you and your team



# Don't forget to fill out the survey!

## Select your session, select survey, rate the session (A01) and submit!

Thank You



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