

Article

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Learning InterSystems by Developer Community Articles

In this article you will have access to the curated base of articles from the InterSystems Developer Community of the most relevant topics to learning InterSystems IRIS. Find top published articles ranked by Machine Learning, Embedded Python, JSON, API and REST Applications, Manage and Configure InterSystems Environments, Docker and Cloud, VSCode, SQL, Analytics/BI, Globals, Security, DevOps, Interoperability, Native API. Learn and Enjoy!

Machine Learning

Machine Learning is a mandatory technology to build advanced data analysis and automate manual activities with excellent efficiency. It creates cognitive models that learn from the existing data, and perform predictions, probability calculations, classifications, identifications, and automation of "non-creative" human activities based on its self-adjusted algorithms.

In all scenarios, InterSystems IRIS acts as a data platform and environment for creating, executing, making available, and using these machine learning models. IRIS enables the use of ML from SQL commands (IntegratedML), execution of ML using Embedded Python and PMML(Predictive Model Markup Language). You can check how it functions in the following articles:

Title	Description	URL
IntegratedML hands-on lab	Practical Overview to IntegratedML	https://community.intersystems.com/post/integratedml-hands-lab
AI Robotization with InterSystems IRIS Data Platform	AI on IRIS productions	https://community.intersystems.com/post/ai-robotization-intersystems-iris-data-platform
Web App to Predict Diabetes using IRIS IntegratedML	IntegratedML sample	https://community.intersystems.com/post/web-app-predict-diabetes-using-iris-integratedml
Predict Maternal Health Risks	IntegratedML sample	https://community.intersystems.com/post/predict-maternal-health-risks
Using Machine Learning to Organize the Community – 1	Using Python ML libraries	https://community.intersystems.com/post/using-machine-learning-organize-community-1

ObjectScript language

ObjectScript is InterSystems' official programming language. It is easy, flexible, and very powerful in creating backend, integration, and analytics applications. Consult the following articles for more information:

Title	Description	URL
InterSystems ObjectScript 101++ (EN)	Video series to learn ObjectScript	https://community.intersystems.com/post/intersystems-objectscript-101
On \$Sequence function	Create sequences of numbers	https://community.intersystems.com/post/sequence-function
Writing better-performing loops in Caché ObjectScript	Do loops	https://community.intersystems.com/post/writing-better-performing-loops-cach-objectscript
Data anonymization, introducing iris-Disguise	Learn how to do customizations on ObjectScript persistent classes and properties	https://community.intersystems.com/post/data-anonymization-introducing-disguise
ObjectScript error handling snippets	Exception handling	https://community.intersystems.com/post/objectscript-error-handling
Traditional Debugging in ObjectScript	Debug techniques	https://community.intersystems.com/post/traditional-debugging-objectscript
Using Regular Expressions in Caché	Work with Regular Expressions	https://community.intersystems.com/post/using-regular-expressions-cach-objectscript
Robust Error Handling and Cleanup in ObjectScript	Write code with quality	https://community.intersystems.com/post/robust-error-handling-cleanup-objectscript
SPOOL - the forgotten device	Using Spool	https://community.intersystems.com/post/spool-forgotten-device
How we learned to stop worrying and love InterSystems Ensemble	Processing JSON on Productions	https://community.intersystems.com/post/how-we-learned-stop-worrying-love-intersystems-ensemble
A more useFull Object Dump	Dumping objects	https://community.intersystems.com/post/more-usefull-object-dump
Logging using macros in InterSystems IRIS	Logging using macros	https://community.intersystems.com/post/logging-using-macros-iris
SYSLOG - what it really is and what it means	Debug information on Syslog	https://community.intersystems.com/post/syslog-what-it-really-means

Title	Description	URL
Tips for debugging with %Status	Debug using %Status	https://community.intersystems.com/post/tips-debugging-status
Making the most of \$Query	Looking for data using \$Query	https://community.intersystems.com/post/making-most-query
Multidimensional Property Persistence - Part 1 (Classic)	Multidimensional persistent properties	https://community.intersystems.com/post/multidimensional-property-persistence-part-1-classic
The adopted Bitmap	Bitmap indexes	https://community.intersystems.com/post/adopted-bitmap
How to become a time lord - The birth	Date and Time API	https://community.intersystems.com/post/how-become-time-lord
Importance and Collection of Exact Version Information (\$zv / \$zversion)	Get IRIS version	https://community.intersystems.com/post/importance-and-collection-version-information-zv-zversion
Date before Dec.1840 ? Negative \$H(orolog) ?	Negative Dates	https://community.intersystems.com/post/date-dec1840-negative
Creating a Custom Index Type in Caché	Creating custom indexes	https://community.intersystems.com/post/creating-custom-index-cach%C3%A9
\$LIST string format and %DynamicArray and %DynamicObject classes	Using \$LIST, Dynamic Object, and Dynamic Arrays	https://community.intersystems.com/post/list-string-format-and-dynamic-object-classes
SQL for ^ERROR Global	Use SQL to see Error content	https://community.intersystems.com/post/sql-error-global
Add a default setting value by code	Setting default values	https://community.intersystems.com/post/add-default-setting-value
Iterate over dynamic object	Use Iterate	https://community.intersystems.com/post/iterate-over-dynamic-object
Listing all of the properties in a class (and why I love ObjectScript)	ObjectScript properties iteration	https://community.intersystems.com/post/listing-all-properties-class-objectscript
Try catch block I usually use in InterSystems ObjectScript	Try Catch handling	https://community.intersystems.com/post/try-catch-block-i-usually-use-inter-systems-objectscript
Running shell commands in ObjectScript	Run shell commands	https://community.intersystems.com/post/running-shell-commands-objectscript

Embedded Python

Python is one of the most popular and commonly used programming languages in the world (<https://www.tiobe.com/tiobe-index/>). InterSystems IRIS is a data platform open to all main programming languages. However, speaking about Python, this amazing language and its libraries are available for use everywhere in IRIS: in classes, SQL, and integrations/productions. For those who do not know or do not want to know ObjectScript (InterSystems programming language), it's a great option. See the following articles on how to do this:

Title	Description	URL
Let's fight against the machines	Build a tic tac toe game using Embedded Python	https://community.intersystems.com/post/lets-fight-against-machines
InterSystems IRIS 2021.2+ Python Examples (Embedded, Native APIs and Notebooks)	See Python and IRIS on some Python notebooks	https://community.intersystems.com/post/intersystems-iris-20212-python-examples-embedded-native-apis-and-notebooks
WebSocket Client with embedded Python	Custom Socket sample	https://community.intersystems.com/post/websocket-client-embedded-python
IRIS Python Native API in AWS Lambda	Python on AWS	https://community.intersystems.com/post/iris-python-native-api-aws-lambda
How I added ObjectScript to Jupyter Notebooks	IRIS on notebooks	https://community.intersystems.com/post/how-i-added-objectsript-jupyter-notebooks
Welcome Django	Create Python Django apps with IRIS as a database	https://community.intersystems.com/post/welcome-django
Geocoding with IRIS and Google Maps API	Using Geocoding python library	https://community.intersystems.com/post/geocoding-iris-and-google-maps-api
REST Service for Convert text to audio using IRIS and Python gTTS	Python sample using gTTS	https://community.intersystems.com/post/rest-service-convert-text-audio-using-iris-and-python-gtts
Building IRIS Responsive dashboard with Python Flask Web Framework	Flesk web app with IRIS	https://community.intersystems.com/post/building-iris-responsive-dashboard-python-flask-web-framework

JSON

JSON is one of the most widely used interoperability formats for sending and receiving data on the market. InterSystems IRIS supports this format in several ways. It is possible to have your native database in JSON (DocDB), serialize and deserialize objects, and process requests and responses in JSON, especially from REST services. Review the following articles:

Title	Description	URL
Introducing new JSON capabilities in Caché 2016.1	Presenting ObjectScript JSON API	https://community.intersystems.com/post/introducing-new-json-capabilities-cach%C3%A9-20161
JSON Enhancements	JSON Adaptor API	https://community.intersystems.com/post/json-enhancements

API and REST Applications

Backend applications are currently developed in the REST (Representational State Transfer) paradigm and are exposed as Web APIs. The following articles will help you see how it works:

Title	Description	URL
GraphQL for InterSystems Data Platforms	Create REST API with GraphQL style	https://community.intersystems.com/post/graphql-intersystems-data-platforms
Introducing InterSystems API Manager	API Management overview	https://community.intersystems.com/post/introducing-intersystems-api-manager
Advanced URL mapping for REST	Mapping routes to your APIs	https://community.intersystems.com/post/advanced-url-mapping-rest
AppS.REST - a new REST framework for InterSystems IRIS	Create REST apps easily	https://community.intersystems.com/post/appsrest-new-rest-framework-intersystems-iris
RESTForms - REST API for your classes	Create REST API for CRUD applications	https://community.intersystems.com/post/restforms-rest-api-your-classes
Developing REST API with a spec-first approach	Contract First Approach to develop APIs	https://community.intersystems.com/post/developing-rest-api-spec-first-approach
ObjectScript REST API Cookbook	REST API development tips	https://community.intersystems.com/post/objectscript-rest-api-cookbo
Generate Swagger spec from persistent and serial classes	Contract First Approach to develop APIs	https://community.intersystems.com/post/generate-swagger-spec-persistent-and-serial-classes
InterSystems IRIS REST Application Patterns	Create API REST using IRIS	https://community.intersystems.com/post/intersystems-iris-rest-application-patterns

Title	Description	URL
Let's create an FHIR profile using SUSHI Part 1	Create custom FHIR profiles	https://community.intersystems.com/post/lets-create-fhir-profile-using-sushi-part-1
IAM (InterSystems API Manager), Zero to Hero	Manage your APIs with IAM	https://community.intersystems.com/post/iam-intersystems-api-manag-zero-hero
Using InterSystems API Management to Load Balance an API	Use APIM to do API load balance	https://community.intersystems.com/post/using-intersystems-api-management-load-balance-api
Securing your APIs with OAuth 2.0 in InterSystems API Management – Part 1	Secure your API using APIM	https://community.intersystems.com/post/securing-your-apis-oauth-20-intersystems-api-management-%E2%80%93-part-1
Getting an Angular UI for your InterSystems IRIS application in 5 minutes	Full Stack app with IRIS and Angular	https://community.intersystems.com/post/getting-angular-ui-your-intersystems-iris-application-5-minutes
Upload into an InterSystems IRIS REST API	Save files using REST API	https://community.intersystems.com/post/upload-intersystems-iris-rest-api

Manage and Configure InterSystems Environments

The good management and configuration of IRIS environments are essential for the performance, security, availability, and reliability of the applications used by users. These articles can give you excellent tips on how to do this.

Title	Description	URL
InterSystems Data Platforms Capacity Planning and Performance Series Index	Capacity and Performance improvement	https://community.intersystems.com/post/intersystems-data-platforms-capacity-planning-and-performance-series-index
Deploying Applications in InterSystems Cache with %Installer	Using %Installer to create namespaces, databases, and applications configuration	https://community.intersystems.com/post/deploying-applications-intersystems-cache-installer
Horizontal Scalability with InterSystems IRIS	Set IRIS instances for horizontal scalability	https://community.intersystems.com/post/horizontal-scalability-intersystem-iris

Title	Description	URL
The InterSystems Iris Fhirserver running on a Raspberry Pi Raspberry running as a FHIRserver	Run IRIS inside Raspberry PI	https://community.intersystems.com/post/intersystems-iris-fhirserver-running-raspberry-pi-raspberry-running-fhirserver
Database Mirroring without a Virtual IP Address	Set mirrors using VIP	https://community.intersystems.com/post/database-mirroring-without-virtual-ip-address
Apache Web Gateway with Docker	Configure SSL and Web Gateway for web applications	https://community.intersystems.com/post/apache-web-gateway-docker
Work with SAML in IRIS	SAML to Web services	https://community.intersystems.com/post/work-saml-iris
Mastering the %SYSTEM.Encryption class	Encrypt and decrypt using IRIS	https://community.intersystems.com/post/mastering-systemencryption-class

Docker and Cloud

The new application architectures work in container Docker and in the cloud, aiming to achieve elastic scalability, shorter installation, configuration, and provisioning times, and reduced infrastructure complexity and cost. Study these articles to learn how to bring IRIS to the cloud:

Title	Description	URL
Highly available IRIS deployment on Kubernetes without mirroring	IRIS on cloud clusters with Kubernetes	https://community.intersystems.com/post/highly-available-iris-deployment-kubernetes-without-mirroring
InterSystems IRIS Example Reference Architectures for Amazon Web Services (AWS)	IRIS on AWS	https://community.intersystems.com/post/intersystems-iris-example-reference-architectures-amazon-web-services-aws
InterSystems Example Reference Architecture for Microsoft Azure Resource Manager (ARM)	IRIS on Azure with cheap machines (ARM machines)	https://community.intersystems.com/post/intersystems-example-reference-architecture-microsoft-azure-resource-manager-arm
Dockerfile and Friends or How to Run and Collaborate to ObjectScript Projects on InterSystems IRIS	Learn about important files on Docker projects	https://community.intersystems.com/post/dockerfile-and-friends-or-how-run-and-collaborate-objectscript-projects-intersystems-iris

Title	Description	URL
InterSystems IRIS Deployment Guide for AWS using CloudFormation template	IRIS on AWS using CloudFormation	https://community.intersystems.com/post/intersystems-iris-deployment-guide-aws-using-cloudformation-template
InterSystems IRIS Example Reference Architectures for Google Cloud Platform (GCP)	IRIS on Google Cloud	https://community.intersystems.com/post/intersystems-iris-example-reference-architectures-google-cloud-platform-gcp
Using AWS Glue with InterSystems IRIS	Using IRIS and AWS Glue (AWS ETL tool)	https://community.intersystems.com/post/using-aws-glue-intersystems-iris
Amazon EKS and IRIS. High Availability and Backup	IRIS on HA with AWS	https://community.intersystems.com/post/amazon-eks-and-iris-high-availability-and-backup
Running InterSystems Reports in containers	IRIS reports on Docker	https://community.intersystems.com/post/running-intersystems-reports-in-containers
Running InterSystems IRIS in a FaaS mode with Kubeless	IRIS on Kubernetes	https://community.intersystems.com/post/running-intersystems-iris-faaS-mode-kubeless
InterSystems Kubernetes Operator Deep Dive: Introduction to Kubernetes Operators	IRIS on Kubernetes	https://community.intersystems.com/post/intersystems-kubernetes-operator-deep-dive-introduction-kubernetes-operators
Scaling Cloud Hosts and Reconfiguring InterSystems IRIS	Scaling IRIS on AWS, Azure, or GCP	https://community.intersystems.com/post/scaling-cloud-hosts-and-reconfiguring-intersystems-iris
Deploying a Simple IRIS-Based Web Application Using Amazon EKS	IRIS on AWS	https://community.intersystems.com/post/deploying-simple-iris-based-web-application-using-amazon-eks

VSCode

VSCode is one of the most used development IDE in the world. IRIS fully supports this IDE. See the following articles:

Title	Description	URL
VSCoDe-ObjectScript on GitHub	Develop IRIS apps into Web Github VSCoDe	https://community.intersystems.com/post/vscode-objectscript-github
GitHub Codespaces with IRIS	Develop IRIS apps into Web Github	https://community.intersystems.com/post/github-codespaces-iris
VSCoDe Tips & Tricks - SOAP Wizard	Create shortcut option on VSCoDe	https://community.intersystems.com/post/vscode-tips-tricks-soap-wizard
Adding your own snippets to VS Code	Create snippets	https://community.intersystems.com/post/adding-your-own-snippets-vs-code

SQL

SQL is one of the most used language for dealing with relational databases. These articles demonstrate how to perform queries and data persistence:

Title	Description	URL
Free Text Search: The Way To Search Your Text Fields That SQL Developers Are Hiding From You!*	Using Indexes to promote advanced search	https://community.intersystems.com/post/free-text-search-way-search-your-text-fields-sql-developers-are-hiding-you
Improve SQL Performance for Date Range Queries	Do SQL Queries using dates	https://community.intersystems.com/post/improve-sql-performance-date-range-queries
Static WHERE Conditions	Where on Persistent Classes	https://community.intersystems.com/post/static-where-conditions
2021.2 SQL Feature Spotlight - Run Time Plan Choice	Select Runtime SQL Execution Plan	https://community.intersystems.com/post/20212-sql-feature-spotlight-run-time-plan-choice
New in 2020.1: the Universal Query Cache	SQL Cache	https://community.intersystems.com/post/new-20201-universal-query-cache
Materialized Views	Create views inside persistent classes	https://community.intersystems.com/post/materialized-views
Debugging Trick with SQL	Debug SQL commands	https://community.intersystems.com/post/debugging-trick-sql

Title	Description	URL
Using ClassQueries() as Tables	Creating views	https://community.intersystems.com/post/using-classqueries-tables
M:N Relationship	Mapping N to N relationships	https://community.intersystems.com/post/mn-relationship
Reading AWS S3 data on COVID as SQL table in IRIS	Get CSV data from AWS S3 to IRIS table	https://community.intersystems.com/post/reading-aws-s3-data-covid-sql-table-iris
The One Query Performance Trick You NEED to Know? Tune Table!	SQL tuning	https://community.intersystems.com/post/one-query-performance-trick-you-need-know-tune-table
Data Storage - Information You Must Know to Make Good Decisions When Developing	Configure the data storage section on a persistent class to get more performance	https://community.intersystems.com/post/data-storage-information-you-must-know-make-good-decisions-when-developing
Improve SQL Performance for Date Queries, AGAIN!	Tunning SQL queries for dates	https://community.intersystems.com/post/improve-sql-performance-date-queries-again
Scrollable ResultSet Pagination Sample	Paginate SQL results (see comments too)	https://community.intersystems.com/post/scrollable-resultset-pagination-sample
Day 1: Developing with InterSystems Objects and SQL	Concepts about SQL into InterSystems IRIS	https://community.intersystems.com/post/day-1-developing-intersystems-objects-and-sql
DB Migration using SQLgateway	Migrate from PostgreSQL, MySQL, and other databases to IRIS	https://community.intersystems.com/post/db-migration-using-sqlgateway
Importing CSV into the Existing Table in InterSystems IRIS	Import CSV to SQL Table	https://community.intersystems.com/post/importing-csv-existing-table-intersystems-iris
Four Database APIs	SQL APIs	https://community.intersystems.com/post/four-database-apis
Indexing of non-atomic attributes	Create advanced index options	https://community.intersystems.com/post/indexing-non-atomic-attributes
Know Your Indices	Index creation fundamentals	https://community.intersystems.com/post/know-your-indices
Dynamic SQL to Dynamic Object	Use DynamicSQL	https://community.intersystems.com/post/dynamic-sql-dynamic-object

Title	Description	URL
Data migration tool - Part I: from Postgres to IRIS	Series of articles on how to migrate from popular databases to IRIS database	https://community.intersystems.com/post/data-migration-tool-part-i-postgres-iris

Analytics/BI

BI/Analytics allows making decisions based on data analysis in graphs, dashboards, summaries, and detailed tables and based on navigation and data exploration by the analyst user. Here's how to build analytic applications using IRIS:

Title	Description	URL
COVID-19 Analytics on InterSystems IRIS	Create Analytics dashboards to analyze COVID in the world	https://community.intersystems.com/post/covid-19-analytics-intersystems-iris
DeepSee Troubleshooting Guide	Fix problems	https://community.intersystems.com/post/deepsee-troubleshooting-guide
AnalyzeThis – Quick start into InterSystems BI	Quick start into IRIS BI	https://community.intersystems.com/post/analyzethis-%E2%80%93-quick-start-intersystems-bi
Power BI Connector for InterSystems IRIS. Part I	Using IRIS data inside Power BI	https://community.intersystems.com/post/power-bi-connector-intersystems-iris-part-i
Creating Portlets in DeepSee	Analytics Portlets with IRIS BI	https://community.intersystems.com/post/creating-portlets-deepsee
Game Of Throne Analytics or How long is Arya's Stark List	Analytics sample	https://community.intersystems.com/post/game-throne-analytics-or-how-long-aryas-stark-list
DeepSee Web: InterSystems Analytics Visualization with AngularJS. Part 1	Web dashboards using Angular	https://community.intersystems.com/post/deepsee-web-intersystems-analytics-visualization-angularjs-part-1
Building Analytics Solution with IRIS	Present main options to do analytics with IRIS	https://community.intersystems.com/post/building-analytics-solution-iris

Globals

Globals are the key mechanism in IRIS for flexibly storing and retrieving data, whether in SQL, in classes, in JSON documents, in BI cubes, or other custom formats. Take a glimpse at how to do this in the following articles:

Title	Description	URL
The Art of Mapping Globals to Classes 1 of 3	Mapping globals to SQL tables and Objects	https://community.intersystems.com/post/art-mapping-globals-classes-1-3
Globals Are Magic Swords For Managing Data. Part 1	Fundamentals about globals	https://community.intersystems.com/post/globals-are-magic-swords-managing-data-part-1
GlobalToJSON-embeddedPython-pure	Export globals to JSON	https://community.intersystems.com/post/globaltojson-embeddedpython-pure
Transactions in Global InterSystems IRIS	Manage transactions on Globals persistence	https://community.intersystems.com/post/transactions-global-intersystems-iris
Store Mindmaps using Globals	Using globals to persist mindmap data	https://community.intersystems.com/post/store-mindmaps-using-globals

Security

It is critical to ensure security for any application. Security is related to access and authorization management, tracking and auditing transactions, encryption of the stored and transported content, and setting correct configuration parameters to ensure the protection of sensible resources. Read these articles to understand more about how to establish security:

Title	Description	URL
InterSystems IRIS Open Authorization Framework (OAuth 2.0) implementation - part 1	Using OAuth	https://community.intersystems.com/post/intersystems-iris-open-authorization-framework-oauth-20-implementation-part-1
Debugging Web	Debugging CSP and REST apps	https://community.intersystems.com/post/debugging-web
Class Queries in InterSystems IRIS	Defining SQL Queries inside Persistent classes	https://community.intersystems.com/post/class-queries-intersystems-iris
Using the OS certificate store with TLS/SSL	Using OS certificate to do SSL	https://community.intersystems.com/post/using-os-certificate-store-tls-ssl
Integrity Check: Speeding it Up or Slowing it Down	Ensure integrity	https://community.intersystems.com/post/integrity-check-speeding-it-up-or-slowing-it-down
Tracking Data Changes - Audit Log	Store audit data	https://community.intersystems.com/post/tracking-data-changes-audit-log-1-2

Title	Description	URL
- 1 of 2		
Running the Management Portal (Private Web Server) Over TLS/SSL/HTTPS	Configure SSL to IRIS Web Server	https://community.intersystems.com/post/running-management-portal-private-web-server-over-tlssslhttps
OAuth Authorization and InterSystems IRIS: Taming Trust Protocols	Using OAuth	https://community.intersystems.com/post/oauth-authorization-and-intersystems-iris-taming-trust-protocols
Using Oauth2 with SOAP (Web)Services	Oauth setting for SOAP services	https://community.intersystems.com/post/using-oauth2-soap-webservices
DeepSee: Setting up security - Part 1 of 5	Security on IRIS BI	https://community.intersystems.com/post/deepsee-setting-security-part-1-5
Changes to the security level of the system	Security by default	https://community.intersystems.com/post/changes-security-level-system

DevOps

DevOps is a way to adopt practices and tools that make it possible to automate the fast and quality transition from source code from development (Dev) to production operation (Ops). See how to do this in IRIS.

Title	Description	URL
Continuous Delivery of your InterSystems solution using GitLab - Part I: Git	Continuous delivery with GitLab	https://community.intersystems.com/post/continuous-delivery-your-intersystems-solution-using-gitlab-part-i-git
Introducing InterSystems ObjectScript Package Manager	Use ZPM to configure and install third-party packages inside your application	https://community.intersystems.com/post/introducing-intersystems-objectscript-package-manager
ZPMshow - a helper for tired fingers	How to use ZPM – IRIS Package Manager	https://community.intersystems.com/post/zpmshow-helper-tired-fingers
How to set up a mirror programmatically	Automate the create new mirrors	https://community.intersystems.com/post/how-set-mirror-programmatically
Unit Tests and Test Coverage in the ObjectScript Package Manager	Create Unit Tests for ObjectScript code quality	https://community.intersystems.com/post/unit-tests-and-test-coverage-objectscript-package-manager

Title	Description	URL
Deploying a sharded cluster with Docker and MergeCPF	Automate config using cpf files	https://community.intersystems.com/post/deploying-sharded-cluster-docker-and-mergecpf
Caché ObjectScript Quick Reference	ObjectScript reference pdf document	https://community.intersystems.com/post/cach%C3%A9-objectscript-quick-reference
The Anatomy of ZPM Module: Packaging Your InterSystems Solution	Use ZPM to automate deployment	https://community.intersystems.com/post/anatomy-zpm-module-packaging-your-intersystems-solution
Adding VSCode into your IRIS Container	Embed VSCode inside your docker instance	https://community.intersystems.com/post/adding-vscode-your-iris-container
How to Create New Database, Namespace and Web Application for InterSystems IRIS programmatically	Automate database and namespace creation	https://community.intersystems.com/post/how-create-new-database-namespace-and-web-application-intersystems-iris-programmatically
Unit Tests: Quality of your ObjectScript Code	Quality Assurance with Unit Tests	https://community.intersystems.com/post/unit-tests-quality-your-objectscript-code
Some InterSystems Developer Community Docker Images	Docker community images	https://community.intersystems.com/post/some-intersystems-developer-community-docker-images

Interoperability

IRIS has a powerful data and application interoperability bus. See how to use it with the following articles.

Title	Description	URL
Sending Alerts from Ensemble via Telegram	Production to send data to telegram	https://community.intersystems.com/post/sending-alerts-ensemble-telegram
[InterSystems IRIS for the First Time] Let ' s use Interoperability	Create business services, operations, processes, and productions	https://community.intersystems.com/post/intersystems-iris-first-time-let%E2%80%99s-use-interoperability
InterSystems IRIS Interoperability with Embedded Python	Create business services, operations, processes, and productions using Python	https://community.intersystems.com/post/intersystems-iris-interoperability-embedded-python

Title	Description	URL
Ensemble / Interoperability Training Course	Great sample to learn how to create productions	https://community.intersystems.com/post/ensemble-interoperability-training-course
Some Programmatic Interoperability Examples	Programmatic productions using Python or ObjectScript	https://community.intersystems.com/post/some-programmatic-interoperability-examples
Listing files in folder	List files in a folder	https://community.intersystems.com/post/listing-files-folder
Containerising .Net/Java Gateways (or Kafka Integration Demo)	Kafka support using Java or .Net Native API	https://community.intersystems.com/post/containerising-netjava-gateways-or-kafka-integration-demo
Implementing IRIS Integrations with .NET or Java using PEX	Using PEX to create productions using Java or .Net	https://community.intersystems.com/post/implementing-iris-integrations-net-or-java-using-pex
Migrate from Java Business Host to PEX	Using PEX	https://community.intersystems.com/post/migrate-java-business-host-to-pex
Using Tesseract OCR and Java Gateway	Using Java PEX	https://community.intersystems.com/post/using-tesseract-ocr-and-java-gateway
Creating a PEX Business Operation	Create Java PEX Business Operation	https://community.intersystems.com/post/creating-pex-business-operation
OCR and NLP together into InterSystems IRIS	Java PEX Sample	https://community.intersystems.com/post/ocr-and-nlp-together-intersystems-iris
Creating a custom interoperability business service using an HTTP Adapter	Creating Business Services	https://community.intersystems.com/post/creating-custom-interoperability-business-service-using-http-adapter

Native API

IRIS is open to working with some of the most used programming languages in the market (Java, Javascript/NodeJS, .Net, C++, and Python). To do it we use Native API for each of these languages. Check out these articles:

Title	Description	URL
WebSocket Client JS with IRIS Native API as Docker	Using IRIS and NodeJS to do a WebSocket	https://community.intersystems.com/post/websocket-client-js-iris-native-api-docker-micro-server

Title	Description	URL
Micro Server		
IRIS Native API for ObjectScript	Using Native APIs	https://community.intersystems.com/post/iris-native-api-objectscript
Using ZPM for Node.js	Using ZPM on Node.js projects	https://community.intersystems.com/post/using-zpm-nodejs
Creating a PDF from a Text file	Java Native API for generating PDF	https://community.intersystems.com/post/creating-pdf-text-file
How to Start Development with InterSystems IRIS in Less Than a Minute	Start to develop using IRIS	https://community.intersystems.com/post/how-start-development-intersystems-iris-less-minute
Making a blog using Python + IRIS Globals	A blog on using Python native API	https://community.intersystems.com/post/making-blog-using-python-iris-globals

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