

Acumatica  
**Virtual DevCon**  
2022

June 15-16

 **Acumatica**  
The Cloud ERP

# Acumatica Developer Fundamentals

Acumatica Developer Tools

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Acumatica

# Agenda

## ✓ Acumatica Debugging Tools

- Element Inspector
- DAC Schema Browser
- Source Code Explorer
- Trace Window

## ✓ System Health/ Performance Monitoring

- License Monitoring Console
- Request Profiler
- System Monitor
- System Queues Monitor

```
ext.AddScreenConfigurationFor(screen =>
    screen
    StateIdentifierIs<status>()
    AddDefaultFlow(flow =>
        flow
        .WithFlowStates(fss =>
            {
                fss.Add(initialState, -flowState => -flowSt
                fss.Add<State.hold>(flowState => ...);
                fss.Add<State.open>(flowState => ...);
                fss.Add<State.confirmed>(flowState => ...);
                fss.Add<State.partiallyInvoiced>(flowStat
                fss.Add<State.invoiced>(flowState => ...);
                fss.Add<State.completed>(flowState => ...);
            })
        .WithTransitions(transitions =>
            {
                transitions.AddGroupFrom(initialState, -ts
                transitions.AddGroupFrom<State.hold>(ts =
                transitions.AddGroupFrom<State.open>(ts =
                {
                    ts.Add(t => t.To<State.hold>().IsTrig
                    ts.Add(t => t.To<State.confirmed>().I
                });
                transitions.AddGroupFrom<State.confirmed>
                {
                    ts.Add(t => t.To<State.open>().IsTrig
                    ts.Add(t => t.To<State.invoiced>().Is
                    ts.Add(t => t.To<State.partiallyInvoi
                });
                transitions.AddGroupFrom<State.partiallyI
                transitions.AddGroupFrom<State.invoiced>(
                transitions.AddGroupFrom<State.completed>
            )))
    ))
```

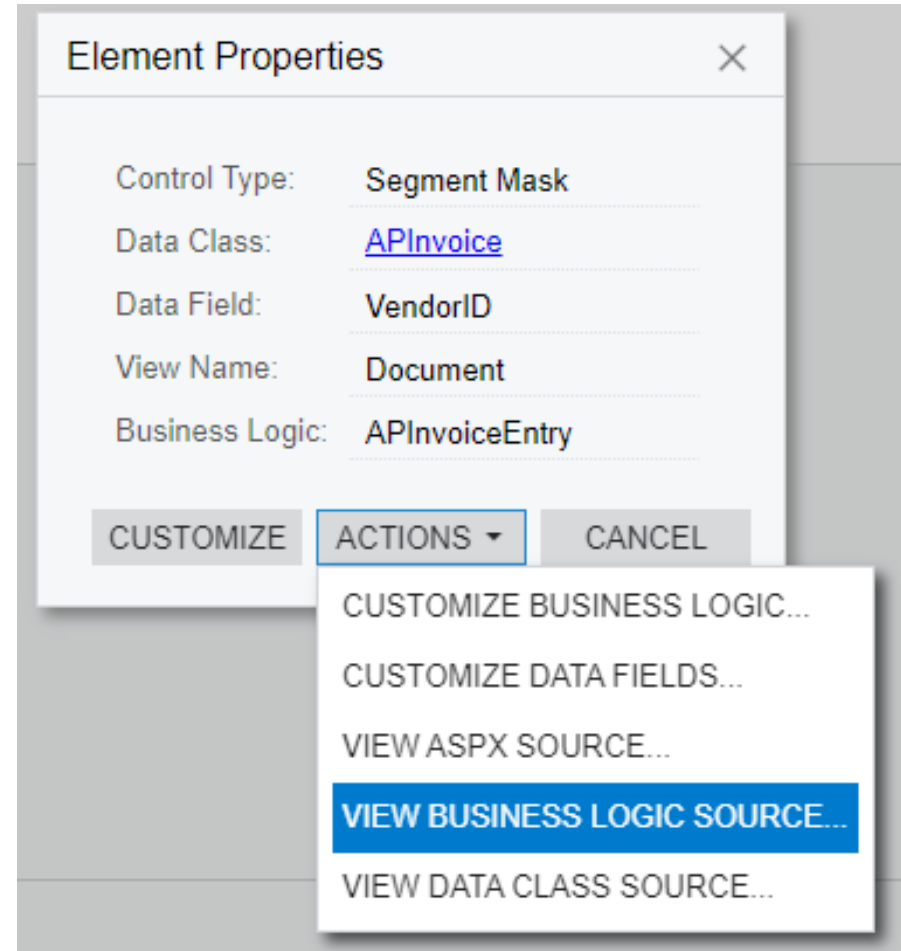
# Part 1 : Acumatica Debugging Tools

# Element Inspector

# Element Inspector

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- View information for any visual element
- Start customization of inspected element



# DAC Schema Browser

# DAC Schema Browser

- Page displays information about the DAC
- Ways to access DAC schema Browser

DAC Schema Browser
ARInvoice DAC 3
Source Code DAC Query Source Data

1

- > Customization 2
- > PX.Api
- > PX.Api.ContractBased.Maintenance
- > PX.Api.ContractBased.UI
- > PX.Api.ContractBased.UI.DAC
- > PX.Api.ImageRecognition.DAC
- > PX.Api.Mobile.CapturingImages.P...
- > PX.Api.Mobile.MultiFactorAuth.DAC
- > PX.Api.Mobile.PushNotifications.DAC
- > PX.Api.Webhooks
- > PX.Api.Webhooks.DAC
- > PX.BarcodeProcessing
- > PX.BusinessProcess.DAC
- > PX.BusinessProcess.UI
- > PX.Caching
- > PX.CloudServices.DAC
- > PX.CloudServices.Tenants
- > PX.Commerce.BigCommerce
- > PX.Commerce.Core
- > PX.Commerce.Objects
- > PX.Commerce.Objects.Override
- > PX.Commerce.Objects.Substitutes
- > PX.Commerce.Shopify
- > PX.CS
- > PX.Dashboards
- > PX.Dashboards.DAC
- > PX.Dashboards.Widgets
- > PX.Data
- > PX.Data.Automation
- > PX.Data.BQL
- > PX.Data.EP
- > PX.Data.Licensing
- > PX.Data.Licensing.SM
- > PX.Data.Localization
- > PX.Data.Maintenance.GI

Definition Fields Incoming References Outgoing References

Base DAC: [ARRegister](#) 4

Display Name: AR Invoice/Memo

Namespace: PX.Objects.AR

Primary Screens: Invoices and Memos ([AR301000](#)), Payments and Applications ([AR302000](#)), Cash Sales ([AR304000](#)), Invoices ([SO303000](#))

Customization: ARInvoiceExt (PX.Objects.dll), FSXARInvoice (PX.Objects.FS.dll)

### Summary 5

Represents the Accounts Receivable invoices, credit and debit memos, overdue charges and credit write-offs as well as the invoices created in the Sales Orders module (see SOInvoice). The records of this type are created and edited through the Invoices and Memos (AR.30.10.00) screen (corresponds to the ARInvoiceEntry graph). The SO Invoices are created and edited through the Invoices (SO.30.30.00) screen (corresponds to the SOInvoiceEntry graph).

### Fields 6

Name	Type	Display Name	Foreign Reference
DocType	char(3)	Type	
RefNbr	nvarchar(15)	Reference Nbr.	<a href="#">ARRegister</a>
AdjCntr	int		
ApplicationBalance	NONEXISTENT IN DB	decimal	

### Incoming References 7

Parent Key Fields	Child DAC	Child Key Fields
NotelD	<a href="#">APIInvoice</a>	IntercompanyInvoiceNotelD
RefNbr	<a href="#">ARAdjust</a>	PPDCrMemoRefNbr
DocType, RefNbr	<a href="#">ARAdjust</a>	AdjDocType, AdjRefNbr
DocType, RefNbr	<a href="#">ARDunningLetter</a>	FeeDocType, FeeRefNbr

### Outgoing References 8

Child Key Fields	Parent DAC	Parent Key Fields
ARAccountID	<a href="#">Account</a>	AccountID
RetainageAcctID	<a href="#">Account</a>	AccountID
BillAddressID	<a href="#">ARAddress</a>	AddressID
ShipAddressID	<a href="#">ARAddress</a>	AddressID

# Source Code Explorer



# Source Code Explorer

- To Explore the C# Code of a BLC
- To Explore the C# Code of a DAC
- To Explore the ASPX Code of a Page

The screenshot displays the Acumatica Source Code Explorer interface. The top navigation bar includes the Acumatica logo, a search field, and a refresh icon. The right side of the header shows the user's name, 'Revision Two Pro', and their role, 'Products Wholesale'. The left sidebar contains a navigation menu with categories like Favorites, Data Views, Time and Expenses, Finance, Banking, Projects, Payables, Receivables, Sales Orders, Purchases, Inventory, Payroll, Dashboards, More Items, and Customization. The main content area is titled 'Source Code' and shows the 'BUSINESS LOGIC' tab selected. The 'Graph Name' field is set to 'PX.Objects.SO.POCreateSalesOrderProcess'. The code editor displays the following C# code:

```
public class POCreateSalesOrderProcess : FXGraph<POCreateSalesOrderProcess>
{
    public virtual void GenerateSalesOrdersFromPurchaseOrders(List<POForSalesOrderDocument> itemsList, POForSalesOrderFilter filter)
    {
        var orderEntry = FXGraph.CreateInstance<POOrderEntry>();
        foreach (POForSalesOrderDocument item in itemsList)
        {
            SetProcessingResult(GenerateSalesOrderFromPurchaseOrder(orderEntry, item, filter));
        }
    }

    public virtual void GenerateSalesOrdersFromPurchaseReturns(List<POForSalesOrderDocument> itemsList, POForSalesOrderFilter filter)
    {
        var receiptEntry = FXGraph.CreateInstance<POReceiptEntry>();
        foreach (POForSalesOrderDocument item in itemsList)
        {
            SetProcessingResult(GenerateSalesOrderFromPurchaseReturn(receiptEntry, item, filter));
        }
    }

    public virtual ProcessingResult GenerateSalesOrderFromPurchaseOrder(POOrderEntry orderEntry, POForSalesOrderDocument item, POForSalesOrderFilter filter)
    {
        ProcessingResult result = new ProcessingResult();
        FXFilteredProcessing<POForSalesOrderDocument, POForSalesOrderFilter>.SetCurrentItem(item);
        orderEntry.Clear();
        orderEntry.Document.Current = orderEntry.Document.Search<POOrder>(item.DocNbr, item.DocType);
        POOrder po = orderEntry.Document.Current;

        if (item.Excluded == true)
        {
            try
            {
                po.ExcludeFromIntercompanyProc = true;
                po = orderEntry.Document.Update(po);
                orderEntry.Save.Press();
            }
            catch (Exception ex)
            {
                result.AddErrorMessage(ex.Message);
            }
            return result;
        }

        List<POLine> pOLines = orderEntry.Transactions.Select().RowCast<POLine>().ToList();

        if (filter.CopyProjectDetails == true)
        {
            int? projectID = null;
            foreach (POLine poLine in pOLines)
            {
                if (projectID == null)
                {
                    projectID = poLine.ProjectID;
                }
            }
        }
    }
}
```

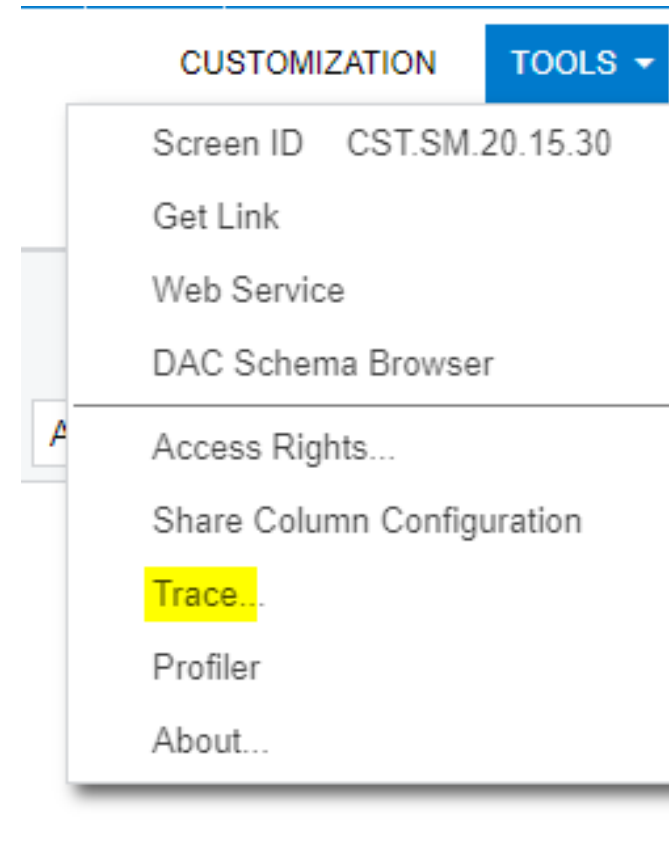
A trial mode warning is visible at the bottom: 'Your product is in trial mode. Only two concurrent users are allowed.'

# Trace Window

# Trace Window

- To troubleshoot an issue
- Tools → Trace
- Use PXTrace

```
catch (Exception ex)
{
    PXTrace.WriteError(ex);
}
```



## Part 2 : System Health/ Performance Monitoring

# License Monitoring Console

# License Monitoring Console

- Commonly encountered error

```
1  
2 "message": "An error has occurred.",  
3 "exceptionMessage": "API Login Limit",  
4 "exceptionType": "PX.Data.PXException",  
5 "stackTrace": " at PX.LicensePolicy.PXLicensePolicy.CheckApiUsersLimits(HttpContextBase c)
```

- To view limits for system resources in Acumatica license

License Monitoring Console CUSTOMIZATION TOOLS ▾

🔴 LICENSE STATISTICS WARNINGS CONSTRAINT HISTORY

Month	Commercial Transactions (% of Limit)	ERP Transactions (% of Limit)
> 05-2022	0	3

|< < > >|

Date	Commercial Transactions (% of Limit)	ERP Transactions (% of Limit)	Peak Number of Web Services API Requests per Minute (% of Limit)	* Declined API Requests (% of All)	* Delayed API Requests (% of All)
> 5/17/2022	0	0	0	0 (0%)	0 (0%)
5/18/2022	0	3	3	0 (0%)	0 (0%)

# Request Profiler

# Request Profiler

---

- Tool to troubleshoot performance-related issues
- Used for:
  - Monitor time and memory
  - Analyze time needed for any SQL query
  - Obtain information about the exceptions





# System Monitor

# System Monitor

Acumatica  Revision Two Products Products Wholesale 6/13/2022 8:24 AM admin admin CUSTOMIZATION TOOLS

System Monitor RUNNING PROCESSES ACTIVE USERS RESOURCE USAGE SYSTEM EVENTS REQUESTS IN PROGRESS

Show All Users ABORT VIEW SCREEN ACTIVE THREADS All Records

User	Screen	Title	Process	Total	Errors	Time
------	--------	-------	---------	-------	--------	------

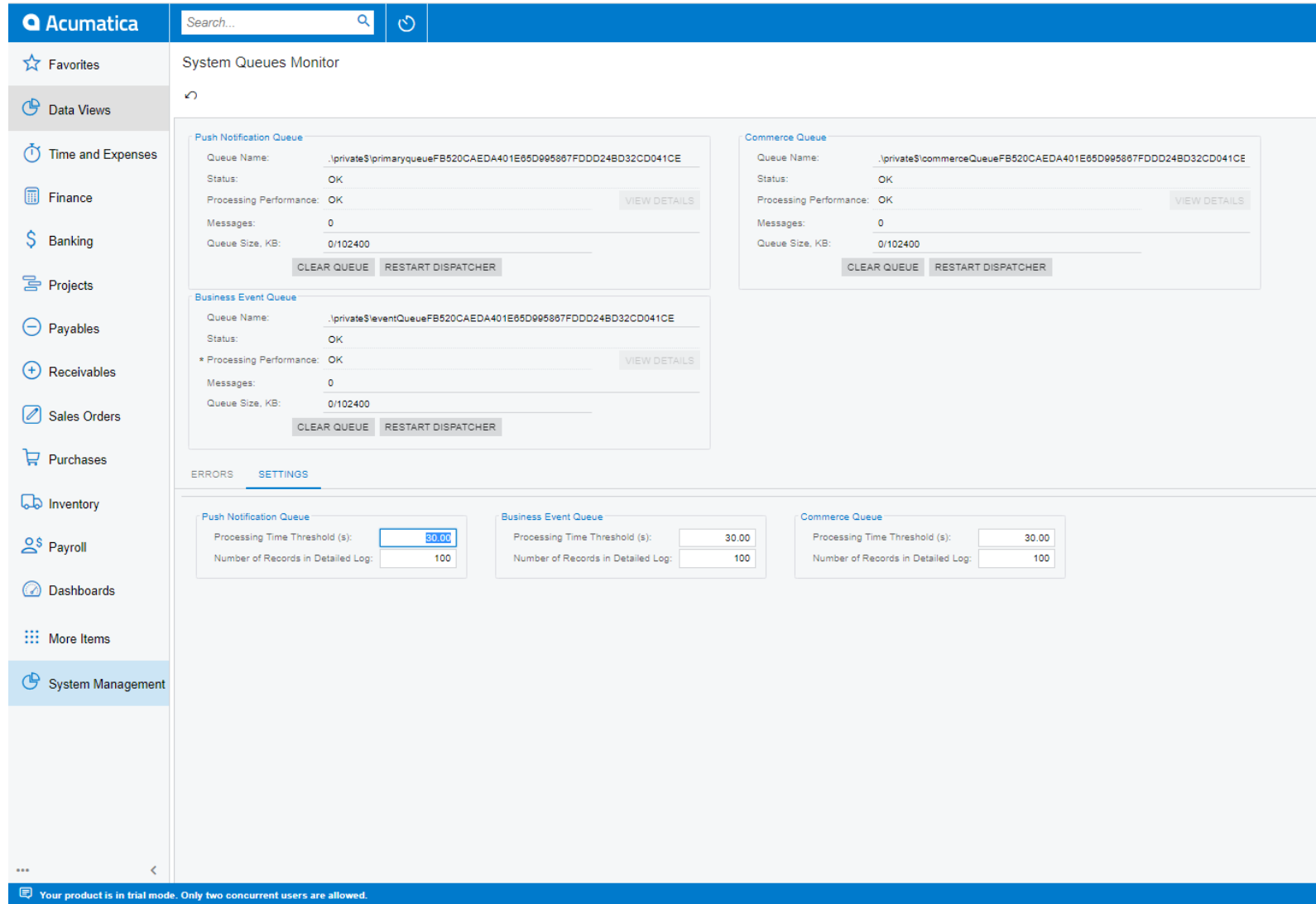
No records found.  
Try to modify parameters above to see records here.

Your product is in trial mode. Only two concurrent users are allowed. ACTIVATE

# System Queues Monitor

# System Queues Monitor

- To monitor statuses of the queues
- Sections
  - Summary Area
  - Errors Tab
  - Settings Tab



Acumatica Search... ↻

System Queues Monitor ↻

**Push Notification Queue**

Queue Name: .\private\$\primaryQueueFB520CAEDA401E85D995887FDD024BD32CD041CE  
Status: OK  
Processing Performance: OK [VIEW DETAILS](#)  
Messages: 0  
Queue Size, KB: 0/102400  
[CLEAR QUEUE](#) [RESTART DISPATCHER](#)

**Commerce Queue**

Queue Name: .\private\$\commerceQueueFB520CAEDA401E85D995887FDD024BD32CD041CE  
Status: OK  
Processing Performance: OK [VIEW DETAILS](#)  
Messages: 0  
Queue Size, KB: 0/102400  
[CLEAR QUEUE](#) [RESTART DISPATCHER](#)

**Business Event Queue**

Queue Name: .\private\$\eventQueueFB520CAEDA401E85D995887FDD024BD32CD041CE  
Status: OK  
\* Processing Performance: OK [VIEW DETAILS](#)  
Messages: 0  
Queue Size, KB: 0/102400  
[CLEAR QUEUE](#) [RESTART DISPATCHER](#)

ERRORS **SETTINGS**

**Push Notification Queue**

Processing Time Threshold (s):   
Number of Records in Detailed Log:

**Business Event Queue**

Processing Time Threshold (s):   
Number of Records in Detailed Log:

**Commerce Queue**

Processing Time Threshold (s):   
Number of Records in Detailed Log:

... <

Your product is in trial mode. Only two concurrent users are allowed.

# Summary

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## **Acumatica Debugging Tools**

- Element Inspector
- DAC Schema Browser
- Source Code Explorer
- Trace Window

## **System Health/ Performance Monitoring**

- License Monitoring Console
- Request Profiler
- System Monitor
- System Queues Monitor

# Resources

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- DAC Schema Browser: [https://help-2022r1.acumatica.com/\(W\(175\)\)/Wiki/ShowWiki.aspx?pageid=bad16648-2ba8-4bb7-bc24-19239d09cf81](https://help-2022r1.acumatica.com/(W(175))/Wiki/ShowWiki.aspx?pageid=bad16648-2ba8-4bb7-bc24-19239d09cf81)
- License Monitoring Console: [https://help-2022r1.acumatica.com/\(W\(57\)\)/Help?ScreenId=ShowWiki&pageid=06869c57-819d-4626-a5a8-72507e6a79d8](https://help-2022r1.acumatica.com/(W(57))/Help?ScreenId=ShowWiki&pageid=06869c57-819d-4626-a5a8-72507e6a79d8)
- Request Profiler: [https://help-2022r1.acumatica.com/\(W\(176\)\)/Help?ScreenId=ShowWiki&pageid=4b2b51fa-eae3-4102-b1f2-d7ee96145174](https://help-2022r1.acumatica.com/(W(176))/Help?ScreenId=ShowWiki&pageid=4b2b51fa-eae3-4102-b1f2-d7ee96145174)
- System Monitor: [https://help-2022r1.acumatica.com/\(W\(177\)\)/Wiki/ShowWiki.aspx?pageid=7569f087-0001-4164-a9cc-dab2a64d781a](https://help-2022r1.acumatica.com/(W(177))/Wiki/ShowWiki.aspx?pageid=7569f087-0001-4164-a9cc-dab2a64d781a)
- System Queues Monitor: [https://help-2022r1.acumatica.com/\(W\(178\)\)/Wiki/ShowWiki.aspx?pageid=dd023d20-4839-4683-892e-69a64b3089aa](https://help-2022r1.acumatica.com/(W(178))/Wiki/ShowWiki.aspx?pageid=dd023d20-4839-4683-892e-69a64b3089aa)

A banner image for the Acumatica Virtual DevCon 2022. It features a hand pointing at a screen with code, overlaid with a blue grid and colorful bokeh lights. The text 'Acumatica Virtual DevCon 2022' is in the top left, and 'June 15-16' is below it.

Acumatica  
**Virtual DevCon**  
2022

June 15-16

The Acumatica logo, a blue circle with a white dot inside, followed by the word 'Acumatica' in a bold, dark blue sans-serif font.

**Acumatica**  
The Cloud ERP

**Thank You!**

[www.acumatica.com/developers](http://www.acumatica.com/developers)