Tech Note 670 Configuring ChartService in QI Analyst 8.0

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Introduction

ChartService is used to monitor charts constantly without opening QI Analyst. ChartService can run constantly, evaluating new data and triggering Alarms twenty four hours a day, seven days a week, without the chart being open anywhere in the enterprise.

Configuring and monitoring the ChartService in QI Analyst is a two-step process:

- Use the ChartService Administration dialog to configure charts and dashboards and to start/stop the ChartService.
- Use the ChartService Viewer to view the dashboards and charts' statuses in real-time.

This *Tech Note* provides step by step procedure to configure ChartService for constant monitoring.

Assumptions

- This Tech Note assumes you are familiar with QI Analyst
- QI Analyst is installed with Process database(s), data table(s) and columns ready to use on the Node to be configured as Chart Server.
- You have local administrator rights on the Node to be configured as Chart Server.

Application Version

• QI Analyst 8.0 SP1 P01

Note: This Tech Note assumes that you have Administrator rights on the server where the QIAdminDBChange and QIDBServerNameEdit utilities are run.

Prerequisites

1. Open QI Controller and verify the process database(s) is listed as a Network process database as shown in Figure 1 (below). Then close the QI Controller.



FIGURE 1: VERIFY YOU HAVE NETWORK PROCESS DATABASE

- 2. Close all QI Analyst windows including Application Server using QI Objects, front-end applications like InTouch or VB using QI Objects and ActiveX Controls.
- 3. Open Task Manager and verify that no QI Processes are running (Figure 2 below). If a process is running, click **End Process** to stop it, then close Task Manager.

• QI Analyst Process are QI Controller.exe, QI Workstation.exe, QINotify.exe, QIAAlarmProvide.exe, QIChartServer.exe, QIAChartViewer.exe.

2	📕 Windows Task Manager					
Eile	Options	⊻iew	Help			
Ap	plications	Proces	ses p	erformance	Networki	ng
	Image Na	ame	U	ser Name	CF	νU
	mmc.exe MmRemin	derServ	Q1 i Q1	User User	0	0

|--|

Abbiid	adons mocesses	Performance Ne	cworking			
_						
I	mage Name	User Name	CPU	CPU Time	Mem Usage	~
m	mc.exe	QIUser	00	0:00:00	2,128 K	
M	ImReminderServi	QIUser	00	0:00:00	9,064 K	
M	lsDtsSrvr.exe	NETWORK SERVIC	E 00	0:00:00	12,760 K	
m	sftesql.exe	SYSTEM	00	0:00:00	4,844 K	
m	smdsrv.exe	SYSTEM	00	0:00:00	26,328 K	
m	spaint.exe	QIUser	00	0:00:02	1,184 K	
n	aPrdMgr.exe	SYSTEM	00	0:00:00	1,316 K	
N	mxSvc.exe	SYSTEM	00	0:00:00	4,724 K	
N	TServApp.exe	SYSTEM	00	0:00:00	1,780 K	
n	vsvc32.exe	SYSTEM	00	0:00:00	4,104 K	
PI	DVDDXSrv.exe	QIUser	00	0:00:00	7,740 K	
R	eportingServices	SYSTEM	00	0:00:01	37,788 K	
n	undll32.exe	QIUser	00	0:00:00	2,660 K	=
n	undll32.exe	QIUser	00	0:00:00	3,712 K	
s	cardsvr.exe	LOCAL SERVICE	00	0:00:00	2,652 K	
se	ervices.exe	SYSTEM	00	0:00:03	3,668 K	_
sł	hstat.exe	QIUser	00	0:00:00	732 K	
s	ssvc.exe	SYSTEM	00	0:00:00	1,928 K	
sr	mss.exe	SYSTEM	00	0:00:00	432 K	
s	poolsv.exe	SYSTEM	00	0:00:00	5,616 K	
s	glservr.exe	SYSTEM	00	0:00:06	118,728 K	
s	qlwriter.exe	SYSTEM	00	0:00:00	3,540 K	~
	-					
Show processes from all users					End Proce	ess
	ec: 79 CPUUc	age: 3%	ommit Charg	e 883M / 20	27M	
ocess	Cesses: 79 CPU Usage: 5% Commit Charge: 003M / 3927M					



- 4. Open Windows Services and verify the following as shown in Figure 3 (below).
 - **QIChartServer** is the only QI Analyst Service listed.
 - QIChartServer Startup Type is Manual.
 - QIChartServer is using the Local System account.

Note: If QINotify is listed as a service, it is possible that the chart service configuration has already been tried on this Node. In that

case do not proceed further, but contact technical support for further help.

Services							
Eile Action View	Help						
← → 💽 🚰 3							
Services (Local)	🖏 Services (Local)						
	QIChartServer	Name 🛆	Description	Status	Startup Type	Log On As	^
	Start the service	Network DDE Network DDE DSDM Network Location A Network Provisionin NmxSvc NTLM Security Sup	Provides n Manages D Collects an Manages X Network M Provides s	Started Started	Manual Manual Manual Manual Manual	Local System Local System Local System Local System Local System Local System	
		NVIDIA Display Driv Office Source Engine Performance Logs Plug and Play Portable Media Seri Print Spooler	Provides s Saves inst Collects pe Enables a c Retrieves t Loads files	Started Started Started	Automatic Manual Automatic Automatic Manual Automatic	Local System Local System Network S Local System Local System Local System	THE REAL PROPERTY.
		Protected Storage QIChartServer QoS RSVP Quest Resource Up Remote Access Aut Remote Access Co Remote Desktop H Remote Procedure Remote Procedure	Provides pr Provides n Resource u Creates a Creates a Manages a Provides th Manages t	Started Started Started	Automatic Manual Manual Manual Manual Manual Automatic Manual	Local System Local System Local System Local System Local System Local System Local System Network S Network S	
	\Extended / Standard /						

FIGURE 3: VERIFY QICHARTSERVER IS THE ONLY QI ANALYST SERVICE LISTED

Configure QI User Permissions

Give the following permissions to the user that will be configured to run QIChartService.

In this example **QIUser** is the user that will be configured to run QIChartService. QIUser is a local user on Node ROOPAHNB23

- 1. Click Start > Settings > Control Panel > Administrative Tools > Local Security Policy > Local Policies > User Rights Assignment.
- 2. Click Log on Locally.
- 3. Go to its Properties and add **QIUser** to the list (Figures 4 and 5 below)



FIGURE 4: OPEN LOG ON LOCALLY PROPERTIES

Log on locally Properties	? 🗙
Local Security Setting Explain This Setting	
Log on locally	
Administrators Backup Operators CORP\ROOPAH Guest IUSR_ROOPAHNB23 Power Users	
QIUser Users	
Add User or Group <u>R</u> emove Modifying this setting may affect compatibility with clients, service and applications. For more information, see <u>Log on locally</u> . (Q823659)	\$,
OK Cancel	spply

FIGURE 5: ADD USER TO LOG ON LOCALLY LIST

- 4. Click Start > Settings > Control Panel > Administrative Tools > Local Security Policy > Local Policies > User Rights Assignment.
- 5. Select Log on as a Service (Figure 6 below).
- 6. Go to its Properties (right-click and click **Properties**) and add the QIUser to the list (Figures 6 and 7 below).



FIGURE 6: OPEN LOG ON AS A SERVICE PROPERTIES

Log on as a service Properties	? 🛛
Local Security Setting Explain This Setting	
Log on as a service	
ASPNET CORP\ROOPAH intouch NETWORK SERVICE QIUser SQLServer2005DTSUser\$ROOPAHNB23 SQLServer2005MSFTEUser\$ROOPAHNB23\$MSSQLSERVER SQLServer2005MSOLAPUser\$ROOPAHNB23\$MSSQLSERVER SQLServer2005MSSQLUser\$ROOPAHNB23\$MSSQLSERVER SQLServer2005NotificationServicesUser\$ROOPAHNB23 SQLServer2005ReportServerUser\$ROOPAHNB23\$MSSQLSERVER SQLServer2005ReportServerUser\$ROOPAHNB23\$MSSQLSERVER SQLServer2005SQLAgentUser\$ROOPAHNB23\$MSSQLSERVER SQLServer2005SQLAgentUser\$ROOPAHNB23\$MSSQLSERVER	VER R
Add <u>U</u> ser or Group <u>R</u> emove	
OK Cancel	

FIGURE 7: ADD USER TO LOG ON AS A SERVICE LIST

- 7. Click Start > Settings > Control Panel > Administrative Tools > Computer Management > Local Users and Groups > Groups.
- 8. Click the Administrators group.
- 9. Go to its Properties and add the **QIUser** to the list (Figure 8 below).



FIGURE 8: GIVE USER LOCAL ADMINISTRATOR RIGHTS

Check for Port 40000 Availability

QIChartService uses Port 40000. You must verify that the Windows Firewall, Antivirus software or any other software/application on that Node is not blocking or reserving this port.

Add Extra User Permissions

If the user that is set up to run QI Chart Service will be different than the *current* windows login user, complete the following steps.

- 1. Click Start > Settings > Control Panel > Administrative Tools > Component Services.
- 2. Select My Computer.
- 3. Right-click and click Properties (Figure 9 below).

Scomponent Services	Somponent Services			
6 File Action View W 4 → € ● ● ● ●	indow Help			
Console Root Component Services Computers Reg My Computer Event Viewer (Local) Services (Local)	Ecomponent Stop MS DTC Refresh all components New Window from Here Properties Help			

FIGURE 9: COMPONENT SERVICES > My COMPUTER PROPERTIES

- 4. On My Computer Properties, click the COM Security tab.
- 5. In the Access Permissions area, click Edit Default (Figure 10 below).

rties	? 🛛
Options	Default Properties
MSDTC	COM Security
is allowed default access applications that determine Edit Limits	to applications. You may their own permissions.
on Permissions is allowed by default to lau You may also set limits on a In permissions.	unch applications or applications that Edit <u>D</u> efault
ΟΚ	Cancel Apply
	Options MSDTC is allowed default access applications that determine Edit Limits on Permissions is allowed by default to lau (ou may also set limits on a on permissions. Edit Limits Edit Limits

FIGURE 10: OPEN COM SECURITY ACCESS PERMISSIONS

- 6. Add the Windows login user, the User configured to run QI Chart Services, System, and all other people who will be logging into this Node while Chart Service is running.
- 7. Click Allow to provide Local and Remote Access Permissions (Figure 11 below).

ess Permission		?
efault Security		
Group or user names:		
🕵 Everyone		^
🔮 QIUser (ROOPAHNB23\QIUs	ser)	
ROOPAH (CORP\ROOPAH)		· · · ·
SYSTEM		~
<		>
	A <u>d</u> d	<u>R</u> emove
Permissions for QIUser	Allow	Deny
Local Access	Image: A start of the start	
Remote Access		
	ОК	Cancel
	OK	Cance

FIGURE 11: GIVE LOCAL ACCESS PERMISSIONS TO USERS

Configuring QI Chart Service Administration

- 1. Click Start > All Programs > Wonderware > QI Analyst 8.0 > QI ChartService Administration.
- 2. Login using the QI Analyst account of QI Controller/QI Workstation (Figure 12 below). If you installed QI Analyst with **Integrated** security you are logged in automatically using your current Windows login account.

QIAnalyst Log	in		×
<u>U</u> ser Name <u>P</u> assword	admin		
OK		Cancel	

FIGURE 12: LOGIN USING QI ACCOUNT

QI Chart Service Administration will appear (Figure 13 below).



FIGURE 13: QI CHARTSERVICE WITHOUT CONFIGURATION

3. Create new Charts and Dashboards in QI Chart Service Administration as explained in Chapter 12 QI Analyst Chart Service and Viewer (p.p. 255 – 258) of the QI Analyst Controller Manual.

You can view the Manual by clicking Start > All Programs > Wonderware > QI Analyst 8.0 > Books > QI Analyst Controller User Manual.

QI Chart Service Administration includes two charts, AdjustedDiameter-XbarR, Diamter-IMR, and one dashboard Ring1 (Figure 14 below). Dashboard Ring1 includes both the charts.



FIGURE 14: QI CHART SERVICE WITH TWO CHARTS AND ONE DASHBOARD

4. Right-click <Local>QI Analyst Chart Service, then click Configure Chart Service (Figure 15 below).



FIGURE 15: CONFIGURE CHART SERVICE SETUP

5. In the Chart Service Account area, click **Browse** (Figure 16 below).

Service Name	QIChartService	Star <u>t</u> Service
Listener <u>P</u> ort number	40000	Stop Service
<u>U</u> pdate Timer in ms	60000	
Chart Service Account		
Domain\UserName	DOMAIN\UserName	Browse

FIGURE 16: BROWSE TO ADD A CHART SERVICE ACCOUNT

- 6. To add an account, type **QIUser** and click **Check Names** to find that account (Figure 17 below).
- 7. Click **OK** to select that account.

Select User or Group	? 🔀
Select this object type:	
User or Group	Object Types
Erom this location:	
ROOPAHNB23	Locations
Enter the object name to select (examples):
ROOPAHNB23\QIUser	Check Names
Advanced	OK Cancel

FIGURE 17: SELECT AN ACCOUNT TO RUN CHART SERVICE

8. Type the correct Password for **QIUser**. Change the **Update Timer** value if desired (Figure 18 below). The default is one minute.

DO NOT change the Listener Port number and **DO NOT START THE SERVICE YET**.

🔜 QIAnalyst ChartSe	rvice Setup	
Service <u>N</u> ame	QIChartService	Star <u>t</u> Service
Listener <u>P</u> ort number	40000	Stop Service
Update Timer in ms	60000	
Domain\UserName	R00PAHNB23\QIUser	Browse
Passw <u>o</u> rd	MODODOCODOCK	
Status Not Runnin	ng OK <u>C</u> ancel	<u>H</u> elp

FIGURE 18: CONFIGURE CHART SERVICE SETUP DETAILS

9. Click **OK**, and a warning message appears (Figure 19 below).

Warning	g !
<u>.</u>	This will change the LogOn options of QINotify Service on this machine. Please ensure that the Login Name and Password are correct. Otherwise, you will not be able to use QI Analyst on this machine !

FIGURE 19: CLICK YES TO PROCEED

10. Click Yes if the Login Name and Password are correct. A Success message appears (Figure 20 below).



FIGURE 20: CLICK OK

11. Click **OK**. Close QiaChartService Administration (Figure 21 below).



FIGURE 21: CLOSE QIACHARTSERVICE ADMINISTRATION

- 12. Open Windows Services and verify the following are true (Figure 22 below).
 - QI Notify is listed as a service, Status is not started, its Startup Type is Manual and its Log On As value is .\QIUser.
 - QIChartServer is not started, its Startup Type is Manual and its Log On As value is .\QIUser.

Note: QI Notify and QIChartServer services should have the same account. If QI Notify is not listed as a service then QI Chart Service was not configured properly. In that case, re-implement this tech note from the beginning with a different account.

Services							
Elle Action View	Help						
Services (Local)	🐞 Services (Local)						
	QINotify	Name 🛆	Description	Status	Startup Type	Log On As	^
	<u>Start</u> the service	Network DDE Network DDE DSDM Network Location A Network Provisionin NmxSvc NT LM Security Sup NVIDIA Display Driv Office Source Engine Performance Logs Plug and Play Portable Media Seri Print Spooler	Provides n Manages D Collects an Manages X Network M Provides s Provides s Provides s Saves inst Collects pe Enables a c Retrieves t Loads files	Started Started Started Started Started	Manual Manual Manual Manual Manual Automatic Manual Automatic Manual Automatic	Local System Local System Local System Local System Local System Local System Local System Network S Local System Local System	
	Extended / Standard /	Protected Storage QIChartServer QINotify QOS RSVP Quest Resource Up Remote Access Aut Remote Access Co Remote Desktop H Remote Procedure	Provides pr Provides n Resource u Creates a Creates a Manages a Provides th	Started Started Started	Automatic Manual Manual Manual Manual Manual Manual Automatic	Local System .\QIUser Local System Local System Local System Local System Local System Network S	

FIGURE 22: VERIFY SERVICES AND ACCOUNTS LOG ON VALUES

- 13. Reopen QI Chart Service Administration, select and right-click <Local> QI Analyst Chart Service.
- 14. Click Load DashBoards (Figure 23 below).

a QiaChartService		
File Action View Favorites Window Help ← → € € 8 8		
Console Root\QI Analyst Services\ <local> QI Analyst QI Analyst Services Charts AdjustedDiar Diameter-IMR DashBoards Ring1 New Window from Here Help</local>	yst Chart Service\DashBoards	
Allows you to select dashboards and load them		

15. Select desired Dashboard(s) (Figure 24 below), then click Save and Load.

🔜 Load DashBoards	
Selected Dashboards will be loaded by the Chartservice	
Ring1	
Select All Deselect All Save and Load Cancel	Help

FIGURE 24: LOAD SELECTED DASHBOARDS

The Chart Load Confirmation message box appears (Figure 25 below).

16. Click Yes to close that message and return to Chart Service Administration dialog.

Chart L	oad Confirmation
⚠	This action will load charts from the above selected dashboards. It could take several minutes to load/reload charts depending on your hardware and the number of charts configured. All ChartService Viewers will be temporarily disconnected. All clients will need to reconnect to the ChartService to see the changes. Do you want to Proceed ?
	<u>Y</u> es

FIGURE 25: ACKNOWLEDGE CHART LOAD

17. Open QIAnalyst ChartService Setup and verify the Status is Not Running, then click Start Service (Figure 26 below).

		Star Service
Listener <u>P</u> ort number	40000	Stop Service
<u>U</u> pdate Timer in ms	60000	
Chart Service Account		
Domain\UserName	ROOPAHNB23\QIUser	Browse
Passw <u>o</u> rd	юникиники	_

FIGURE 26: START THE QI CHARTSERVICE

18. Wait until the Status says Running (Figure 27 below).

Note: The time taken for the status to show as **Running** depends on the number of charts being loaded by the QI Chart Service, and the system resources.

Service Name	QIChartService	Star <u>t</u> Service
Listener <u>P</u> ort number	40000	Stop Service
Update Timer in ms	60000	
Chart Service Account		
Domain\UserName	R00PAHNB23\QIUser	Browse
Password	миникимини	_

FIGURE 27: QICHARTSERVICE RUNNING

- 18. Click **OK** to close Chart Service Setup.
- 19. Close QI Chart Service Administration.

Verify the Charts Were Loaded

To verify if the charts were successfully loaded by QI Chart Service

- 1. Open System Management Console (SMC) by clicking All Programs > Wonderware > System Management Console.
- 2. Verify messages saying **Successfully loaded the chart: ChartNameXXX** appear for every chart that you expected to be loaded by QIChart Service (Figure 28 below).

SMC - [ArchestrA System Manager	ment Co	nsole (ROOP	AHNB23) Log	y Viewer We	fault Grou	ipV.ocal]		
Elle Action Yew Help								
	? # i	0900	i Da					
🧭 ArchestrA System Management Console (IT SU	rt Time 12/01/	1900 11:59:57	PRA 11	End time	12/31/2100	11-59-59.2M	
Galaxy Database Manager	No:	Date	Time	Process ID	Thread ID	Log Flag	Component	Message
ill Dikserver Manager	8055	10/5/2009	11:27:51 AM	4132	5104	Info	QIWWLogger	10/5/2009 11:27:51 AM 32 32 QIDataComponent F03E60: Initializing.
B Log wewer	8056	10/5/2009	11:27:51 AM	4132	2848	Info	QIWWLogger	10/5/2009 11:27:51 AM 32 32 QIDC is hosted by 'C:/Program Files/Wonderware/QIAnalyst8.0/QIChartServer
E Cal Default Group	8057	10/5/2009	11:27:51 AM	4132	5104	Info	QIWWLogger	10/5/2009 11:27:51 AM 2 32 Successfully Logged In, License Type = QL_Workstation_Seat
Local	8058	10/5/2009	11:27:51 AM	4132	2848	Info	QIWWLogger	10/5/2009 11:27:51 AM 2 32 InTouch detected, and QIAlamProvider was successfully initialized.
🛞 🦷 QIATest	8059	10/5/2009	11:27:51 AM	4132	2848	Info	QIWWLogger	10/5/2009 11:27:51 AM 28192 QI Analyst ChartServer Initialzing
Opened Log Files	8060	10/5/2009	11:27:51 AM	4132	5104	Info	QIWWLogger	10/5/2009 11:27:51 AM 28192 QLAnalyst ChartServer Successfully Initialzed
Platform Manager	8061	10/5/2009	11:27:51 AM	4132	2948	Info	QIWWLogger	10/5/2009 11:27:51 AM 28192 Loading charts
	8062	10/5/2009	11:27:51 AM	4132	2948	Trace	QEWWLogger	10/5/2009 11:27:51 AM 4 32 QIDataComponent F03E60: GetDatabaseFromID 1
	8063	10/5/2009	11:27:51 AM	4132	2848	Trace	QEWWLogger	10/5/2009 11:27:51 AM 4 32 QIDataComponent F03E60: GetD8FronID 1 created QIDatabase f0aff0.
	8064	10/5/2009	11:27:51 AM	4132	5104	Info	QDWWL000#r	10/5/2009 11:27:51 AM 28192 Loading Chart :AdjustedDianeter-XbarR
	8065	10/5/2009	11:27:51 AM	4132	5104	501	QEWWLogger	10/5/2009 11:27:51 AM 81024 QIRowCache: F7b2d8 FilCache Query: SELECT QL_PDATA.*, PARTID FROM Q
	8066	10/5/2009	11:27:51 AM	4132	2848	Info	QEWWLogger	10/5/2009 11:27:51 AM 28192 Successfully loaded the Chart: AdjustedDiameter-XbarR Completed
	8067	10/5/2009	11:27:51 AM	4132	5104	Info	QEWWLogger	10/5/2009 11:27:51 AM 28192 Loading Chart :Diameter-IMR
	8068	10/5/2009	11:27:52 AM	4132	5104	500	QEWWLogger	10/5/2009 11:27:52 AM 81024 QIRowCache: S1db660 FillCache Query: SELECT QL_PDATA.*, PARTID FROM
	8069	10/5/2009	11:27:52 AM	4132	2848	Info	QEWWLogger	10/5/2009 11:27:52 AM 28192 Successfully loaded the Chart: Diameter-IMR Completed
	8070	10/5/2009	11:27:52 AM	4132	5104	Info	QIWWLogger	10/5/2009 11:27:52 AM 28192 Loading charts Completed I
	8071	10/5/2009	11:27:52 AM	4132	2848	Info	QIWWLogger	10/5/2009 11:27:52 AM 28192 Server waiting for connection. Port:40000
< >	4	Acres and a second		WACD -	0.220	0.00		
Connected								

FIGURE 28: VERIFY CHARTS ARE SUCCESSFULLY LOADED

- 3. Open Windows Services and verify the following are true (Figure 30 below).
 - QINotify is Started
 - **QIChartServer** is Started

Services							
File Action View	Help						
) 🗟 😰 🖬 🕨 = 🗉 =>						
Services (Local)	🐞 Services (Local)						
	QINotify	Name 🗡	Description	Status	Startup Type	Log On As	^
	Stop the service Restart the service	Network DDE Network DDE DSDM Network Location A Network Provisionin Network Provisionin Network Provisionin Network Provisionin Network Provisionin Network Provisionin NVIDIA Display Driv Office Source Engine Performance Logs Plug and Play Portable Media Seri Print Spooler	Provides n Manages D Collects an Manages X Network M Provides s Provides s Saves inst Collects pe Enables a c Retrieves t Loads files Provides or	Started Started Started Started Started	Manual Manual Manual Manual Manual Automatic Manual Automatic Automatic Manual Automatic	Local System Local System Local System Local System Local System Local System Local System Network S Local System Local System Local System Local System	
	Extended / Standard /	QIChartServer QINotify QOS RSVP Quest Resource Up Remote Access Aut Remote Access Co Remote Desktop H Remote Procedure	Provides pr Provides n Resource u Creates a Creates a Manages a Provides th	Started Started Started Started Started	Automatic Manual Manual Manual Manual Manual Manual Automatic	.\QIUser .\QIUser Local System Local System Local System Local System Local System Local System Network S	V

FIGURE 29: VERIFY SERVICES ARE STARTED

4. Close Windows Services.

Configuring QI Chart Service Viewer to View the Charts

- 1. Click Start > All Programs > Wonderware > QI Analyst 8.0 > QI ChartService Viewer.
- 2. Configure QI Chart Service Viewer as explained in Chapter 12 QI Analyst Chart Service and Viewer (p.p. 260 261) of the QI Analyst Controller Manual.

You can view it by clicking Start > All Programs > Wonderware > QI Analyst 8.0 > Books > QI Analyst Controller User Manual.

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