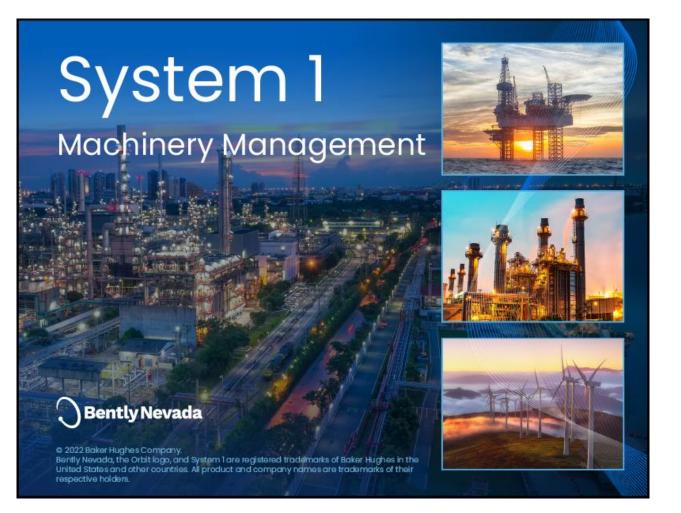




# Welcome to System 1

# Version 22.2 [Nov. 2022]



Welcome to System 1 "Version 22.2" Document #: 125M6426



### Welcome

Bently Nevada is pleased to present System 1 version 22.2, with new capabilities (Figure 1-1)

Users upgrading to version 22.2 will benefit from the many capability enhancements to effective outcomes, which are summarized below.

Edge Devices Monitoring	
Ranger Pro • Replace Ranger Pro Device in System 1	• Receive Balance jobs in System 1
Improved Security & Productivity	
User Management         • Adaptive Profiles - User Defined Roles         Image: Contract of the state of	<section-header></section-header>
Individually Edit Plot Curve Time Range	Display Speed Labels on Comparison Curves

#### Figure 1-1 System 1 22.2 Features

Bently Nevada remains focused on delivering the world's premier plant-wide machinery management software through bi-annual product releases. For a detailed overview of System 1, please visit the <u>website</u>.

Welcome to System 1 "Version 22.2"

Document #: 125M6426

Thank you,

Falang

Tarannum Sarang, Product Manager

On behalf of your System 1 Leadership and Development Teams





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# **1. SYSTEM 1 V22.2 FEATURE OVERVIEW**

### ALL 22.2 FEATURES ARE ONLY SUPPORTED WITH POSTGRESQL AS THE DATA HISTORIAN.

Table 1: System 1 v22.2 – Edge Devices Monitoring

Edge Devices Monitoring								
Bently Devices								
Ranger Pro - Replace Ranger Pro Device in System 1	Authorized users can now replace existing sensors without interrupting the historical trend data.							
SCOUT 200 – Receive Balance jobs in System 1	System 1 can receive balance jobs from SCOUT200 through the Instrument and Remote mode. The Balance jobs tab displays all the Balance jobs performed on the selected machine in the hierarchy.	3.2						

Table 2: System 1 v22.2 - Improved Security and Productivity

Improved Security and Productivity								
User Management								
Adaptive Profiles – User Defined Roles	Add user-defined roles in System 1 using Server Security. User- defined roles are available in addition to the default user roles.	4.1						
Report								
Configuration Reports	Generate configuration reports to export measurements and state configuration information for all machines.	4.2						

#### Table 3: System 1 v22.2 - Enhanced Diagnostics

Enhanced Diagnostics								
Plots								
Display Speed Labels on Comparison Curves	System 1 displays the Speed and Date Time labels on Comparison curves for Polar and SCL Plot.	5.1						

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Individually Edit Plot	Edit the Time Range of a specific curve from within the Bode, Polar,				
Curve Time Range	SCL, and XvsY Plots.	5.2			



# 2. VERSION SUPPORT & OPERATING SYSTEM COMPATIBILITY

System 1 follows a semi-annual release cadence with targeted releases in May and November of each year. Versions are fully supported for a minimum of two years from the published date of availability (Refer System 1 Datasheet).

New Versions of System 1 benefit from:

- Compatibility with the latest Microsoft Client & Server Operating Systems
- Client backwards compatibility to previous versions under support (22.2 Client to 21.1 Server DB)
- Database upgrade from previous versions released within last 3 years (20.1 $\rightarrow$ 22.2)
- Security patch and update testing for the latest available version
- Bug fixes included in the latest available version
- Standard technical support with escalation to engineering as required

Versions no longer supported:

• Standard support is provided for common FAQ type questions, but users are encouraged to update software to the latest version to benefit from new features, OS (Operating System) compatibility, and bug fixes.



# **3. EDGE DEVICES MONITORING**

### 3.1 Ranger Pro Enhancements

### 3.1.1 Replace Ranger Pro Device in System 1

### Ranger Pro Enhancements video located in Bently Nevada Tech Support Training Library Valid M&S Agreement Required

System 1 22.2 allows users to select Ranger Pro sensors from the database and replace them with different or new Ranger Pro sensors. When the sensors are replaced, the existing configuration mappings and historical data trends are retained. This toolset allows users to decommission existing devices and replace them with new devices in case of any type of sensor failure.

		Replace		? ×
🔠 RangerPro Wirele	ss Gateways 🔺 🛄 10.5.92	.144 🔸 🎛 Decommissioned Group 🔺 🖞	] TAG_4901_0001	
Replace	Review			
Old Devices		New Devices	Available Devices	
			← TAG_4901_0004 - SN_4901_0 ← TAG_4901_0005 - SN_4901_0	
			Search	
			Previous Next C	ancel

Figure 3-1: Select a new ranger pro device to replace the existing one to be decommissioned



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		Repl	lace		? ×
🔠 RangerPro Wireles	s Gateways > 📶	10.5.92.144 > 🞛 Decommissio	oned Group > 📋 TAG_49	01_0001	
Replace	Review				
Old Devices		New Devices	Co	ompatibility Acti	
TAG_4901_0001		TAG_4901_0003 - SN_	4901_0003	Match Repl	ace 🗸
			Previou	ıs Confirm	Cancel

Figure 3-2: Select the appropriate action to be performed for the ranger pro device and confirm changes

# 3.2 SCOUT 200

### 3.2.1 Receive Balance jobs in System 1

### SCOUT200 Enhancement video located in Bently Nevada Tech Support Training Library Valid M&S Agreement Required

System 1 v22.2 can now receive balance jobs from SCOUT200 via both Instrument Mode and Remote Comms (in addition to the existing File mode). The balance job data is received along with vibration data during the normal Receive process. System 1 displays balance jobs in the **Balance Job** tab under the **Case History** tab, for the selected machine.

Machines									
Demo Plant     Train		Reviews	Plot Records	Notes	Balance Job				
<ul> <li>Image: Train</li> <li>Mtr-Belt-C1</li> </ul>	TE	Path Asset Name			Tag Name	Balance Speed	Device	Created Date	
AC Mtr (Al		Demo Plant > Mtr	-Pmp (1 Stg BB1/BB2)	Mtr-Pr	np (1 Stg BB1/BB2)	BetweenBrgsPumpBB1BB2Set	1800 rpm	SCOUT200	18-10-2022 04:00 PM
• Mtr-Pmp (	(1 Stg B81/882)	Demo Plant > Mtr-	-Pmp (1 Stg BB1/BB2)	Ntr-Pr	np (1 Stg BB1/BB2)	BetweenBrgsPumpBB1BB2Set	1800 rpm	SCOUT200	18-10-2022 03:56 PM
		Demo Plant > Mtr-	-Pmp (1 Stg BB1/BB2)	Ntr-Pr	np (1 Stg 881/882)	BetweenBrgsPump8B18B2Set	1800 rpm	SCOUT200	18-10-2022 03:51 PM

Figure 3-3 : Balance Job data received in System 1



# 4. IMPROVED SECURITY & PRODUCTIVITY

# 4.1 User Management

### 4.1.1 Adaptive Profiles – User Defined Roles

# User Management video located in Bently Nevada Tech Support Training Library Valid M&S Agreement Required

System 1 22.2 allows users to add user-defined roles, in addition to the default roles available. Users with the server administrator privilege can add these roles. To add or edit user roles, launch the Database Manager and select Tools > Server Security. Under the Roles tab, click + to add a user-defined role and assign the required permissions to the role.

		Server Security		?
Users	Roles			0
Actions	Administrator	Advanced	Basic	NewRole
Configuration				
Add Predefined Notes		V		
Edit Configuration	1			
Manage Certificate	2			
Override Configuration				
Database Management				
Create Audit File			<b>V</b>	
Manage Database	2			
Online Data Collection				
Display				
Acknowledge Alarms	1		7	
Clear Events	<b>V</b>			
Delete Events	W		V	
Delete Notes	1			
Machine Health Admin				
Machine Health User	1	1		
Manage Data	V			
User Management				
Edit User Settings				[17]
Read User Settings				(F)

Figure 4-1: Adding a new custom user role from Server Security

Note: A user cannot rename or delete default user roles (Administrator, Advanced, or Basic).

To add a new user to the role, in the opened databases, select Tools > User Management > Users tab, click + and assign the role while creating the new user. To assign existing users to this role, change the role assignment using the Roles dropdown list on the Users tab. Welcome to System 1 "Version 22.2" Document #: 125M6426



# 4.2 Report

### 4.2.1 Configuration Reports

### Reports video located in Bently Nevada Tech Support Training Library Valid M&S Agreement Required

System 1 22.2 provides the ability to generate Configuration report, which contains System 1 Configuration information for all machines.

The configuration report button is available in the Configure workspace. When the user clicks the configuration report button, System 1 exports these configurations in CSV format:

- Trended Variables Configuration
- Spectrums & Waveforms Configuration
- Machine State Configuration

AutoSav	• 🚥 🖫 b • < <	~ ⇒ Dema	DB-RMP	Spectrums&Waveform_12Sepa	022-00h24m40s.cs			Q	Search	(Alt+Q)											
File	Home Insert Page	e Layout Formulas	Data	Review View Help										-							
	Cut Calibri	↓ 11 → A <sup>*</sup>	A. 3	트 😑 🗞 - 🌼 Wraj	o Text	General		~	i I			Normal	Bad	G	bod		<b>H</b>	× 🖬		∖utoSum ~	A Z V
Paste []	Copy ~		_								-0- 1	Neutral	Calculatio		neck Cell	Ť	Insert Dele		, <b>↓</b> F	ill ~	∠ ° Sort &
~ 🗳	Format Painter B I	U ~ 🖽 ~ 💁 ~ 🛓	<u> </u>	🗧 🗏 🖭 😇 Mer	ge & Center 👻	ee ~ 9	6 9	±0 →0			Table ~	Neutral	Calculatio	<b>n</b>	leck cell	~		· · · ·		lear ~	Filter ~
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A2	▼ : × ✓ .	fx DemoDB-RMP/H	CU/Lean	Amine Pumps 205/132-P-20	05A/Induction M	otor-205	5A/MTR-	Shaft/I	NDE/VE-	801B - M	lotor NDE-	·Υ									
A	В	с	D	E	F		G	н	1.1	J.	к	L	м	N	0	Р	Q	R	S	т	U
						S	ampling				Spectral		Waveform				Running	Collectio			Min
Path	Machine Name			Channel Type	Measurement		ype		Active		Lines	Resolution	Samples	Duration		Rate	Speed	n Time	er of	Speed	Speed
_	DB- Induction Motor-205/				Disp Wf(200Hz)		sync		Yes	200 Hz		0 0.25 Hz		4.0 s	Not Assoc						
	DB-Induction Motor-2054				Disp Wf(128X/1				Yes			4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0 r
	DB-IInduction Motor-205/				Disp Wf(200Hz)		sync		Yes	200 Hz		0 0.25 Hz		4.0 s	Not Assoc						
	DB-IInduction Motor-205/				Disp Wf(128X/1				Yes			4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0 r
	DB-Induction Motor-2054				Disp Wf(200Hz)		sync		Yes	200 Hz		0 0.25 Hz		4.0 s	Not Assoc						
	DB-IInduction Motor-205/				Disp Wf(128X/1				Yes			4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0
	DB-IInduction Motor-205/				Disp Wf(200Hz)		sync		Yes	200 Hz		0 0.25 Hz		4.0 s	Not Assoc						
	DB-IInduction Motor-205/				Disp Wf(128X/1				Yes			4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0
	DB-1205A Gearbox	VE-802A - GB LS DE-Y			Disp Wf(500Hz)		sync		Yes	500 Hz		0 0.625 Hz		1.6 s	Not Assoc						
	DB-1205A Gearbox	VE-802A - GB LS DE-Y			Disp Wf(128X/1				Yes			4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0
	DB-1205A Gearbox	VE-802B - GB LS DE-X			Disp Wf(500Hz)		sync		Yes	500 Hz		0 0.625 Hz		1.6 s	Not Assoc						
	DB-1205A Gearbox	VE-802B - GB LS DE-X			Disp Wf(128X/1				Yes			4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0 i
	DB-1205A Gearbox	VE-802C -GB LS NDE-Y			Disp Wf(500Hz)		sync		Yes	500 Hz		0 0.625 Hz		1.6 s	Not Assoc						
	DB-1205A Gearbox	VE-802C -GB LS NDE-Y			Disp Wf(128X/1				Yes			4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0 i
	DB-1205A Gearbox	VE-802D -GB LS NDE-)			Disp Wf(500Hz)		sync		Yes	500 Hz		0 0.625 Hz		1.6 s	Not Assoc				-		
	DB-1205A Gearbox	VE-802D -GB LS NDE-)			Disp Wf(128X/1				Yes			4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0 i
	DB-1205A Gearbox	ZE-801A - Thrust GB			Disp Wf(500Hz)		sync	mm		500 Hz		0 0.625 Hz		1.6 s	Not Assoc				-		
	DB-1205A Gearbox	ZE-801A - Thrust GB			Disp Wf(128X/1			mm		500.00		4 0.063 X	2048		SE-801A -		4,000	0.24 s	16	5 15,000 rp	on 10.0 i
	DB-1205A Gearbox DB-1205A Gearbox	ZE-801B - Thrust GB		2 Thrust Position Channel	Disp Wf(500Hz)		sync	mm		500 Hz		0 0.625 Hz 4 0.063 X	2048	1.6 s	Not Assoc SE-801A -			0.24 s	-		
		ZE-801B - Thrust GB		2 Thrust Position Channel	Disp Wf(128X/1				Yes	500.00							4,000	0.24 s	16	5 15,000 rp	on 10.0 r
	DB-1205A Gearbox DB-1205A Gearbox	VE-803D -GB HS DE- Y VE-803D -GB HS DE- Y		Radial Vibration Channel	Disp Wf(500Hz) Disp Wf(128X/1		sync		Yes	500 Hz		0 0.625 Hz 4 0.063 X	2048	1.6 s	Not Assoc SE-801B -		E 000	0.19 s	11	5 15.000 m	10.0
	DB-1205A Gearbox DB-1205A Gearbox	VE-803D -GB HS DE- Y VE-803C -GB HS DE- X			Disp Wf(128X/1 Disp Wf(500Hz)				Yes	500 Hz		4 0.063 X 0 0.625 Hz		1.6 s	Not Assoc		5,000	0.195	10	5 15,000 rp	0.01
	DB-1205A Gearbox DB-1205A Gearbox	VE-803C -GB HS DE- X VE-803C -GB HS DE- X			Disp Wf(300H2) Disp Wf(128X/1		sync			500 Hz		4 0.063 X	2048		SE-801B -		F 000	0.19 s	-	5 15,000 rp	
	DB-1205A Gearbox DB-1205A Gearbox	VE-803C -GB HS DE- X VE-803B GB HS NDE- 1			Disp Wf(128X/1 Disp Wf(500Hz)		svnc		Yes	500 Hz		4 0.063 X 0 0.625 Hz		1.6 s	Not Assoc		5,000	0.195	10	5 13,000 fp	10.0
	DB-1205A Gearbox DB-1205A Gearbox	VE-803B GB HS NDE-1			Disp Wf(500HZ) Disp Wf(128X/1				Yes	JUUHZ		4 0.063 X	2048		SE-801B -		5 000	0.19 s	16	5 15,000 rp	10.0
	DB-1205A Gearbox	VE-803A GB HS NDE-1			Disp Wf(128X/1 Disp Wf(500Hz)		sync		Yes	500 Hz		4 0.065 X 0 0.625 Hz		1.6 s	Not Assoc		5,000	0.135	10	2 13,000 ft	
	DB-1205A Gearbox DB-1205A Gearbox	VE-803A GB HS NDE- 3			Disp Wf(300H2) Disp Wf(128X/1				Yes	JUU HZ		4 0.063 X	2048		SE-801B -		5 000	0.19 s	16	5 15.000 m	10.0
	DB-1205A Gearbox DB-1205A Pump	VE-804B - Pump DE- Y			Disp Wf(128X/1 Disp Wf(500Hz)		svnc		Yes	500 Hz		4 0.005 X 0 0.625 Hz		1.6 s	Not Assoc		5,000	0.135	10	10,000 1	10.01
	DB-1205A Pump DB-1205A Pump	VE-804B - Pump DE- Y			Disp Wf(300H2) Disp Wf(128X/1				Yes	500 112		4 0.063 X	2048		SE-801B -		5.000	0.19 s	16	5 15,000 m	10.0
	DB-1205A Pump DB-1205A Pump	VE-804B - Pump DE- Y			Disp Wf(128X/1 Disp Wf(500Hz)		sync		Yes	500 Hz		4 0.063 X 0 0.625 Hz		1.6 s	Not Assoc		3,000	0.175	10	, 10,000 lb	
	DB-1205A Pump DB-1205A Pump	VE-804A - Pump DE- 2		Radial Vibration Channel					Yes	300 HZ		4 0.063 X	2048		SE-801B -		5 000	0.19 s	16	5 15.000 m	10.0
	DB-1205A Pump DB-1205A Pump	VE-804D -Pump NDE-		Radial Vibration Channel			sync		Yes	500 Hz		0 0.625 Hz		1.6 s	Not Assoc		3,000	0.133		10,000 1	
	DB-1205A Pump DB-1205A Pump	VE-804D -Pump NDE-		Radial Vibration Channel					Yes	500 Hz		4 0.063 X	2048		SE-801B -		5 000	0.19 s	1/	5 15,000 rp	10.0 *
	DB-1205A Pump DB-1205A Pump	VE-804C -Pump NDE-		Radial Vibration Channel			sync		Yes	500 Hz		4 0.005 X 0 0.625 Hz		1.65	Not Assoc		3,000	0.17.3	10	, 10,000 Ib	

Figure 4-2: Report generated for spectrums and waveforms configuration



# **5.ENHANCED DIAGNOSTICS**

# **5.1 Plots Enhancements**

### 5.1.1 Display Speed Labels on Comparison Curves

### Plots Enhancements video located in Bently Nevada Tech Support Training Library Valid M&S Agreement Required

System 1 22.2 now displays Speed and Date Time labels on the Polar and SCL plots for the comparison curve, in addition to the primary curve. Before System 1 22.2, Speed and Date Time labels on each sample within the Polar and SCL plots were only displayed for the primary curve.

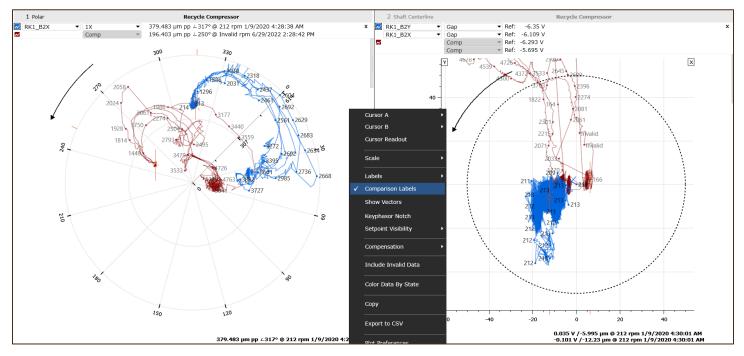


Figure 5-1 Speed Labels displayed on Comparison curve for Polar and SCL Plots

To enable the labels on the Comparison curve, right-click on the plotting area and choose "Comparison Labels". Labels on the Comparison curve are displayed only for the first selected Comparison curve.



### 5.1.2 Individually Edit Plot Curve Time Range

### Plots Enhancements video located in Bently Nevada Tech Support Training Library Valid M&S Agreement Required

In the previous release, System 1 supported comparison of data from different time ranges in the same plot through Comparison Data Set. In System 1 22.2, users can now compare data from different time ranges, even for curves for which Comparison Data set is not stored, by editing the time range of each individual curve within that Plot. This capability is supported in Bode, Polar, SCL, and XvsY Plots.

To edit the time range for each individual curve, from the Plot header, either click the Time Range field or right-click on the Plot header and choose "Set Custom Span".

To reset the configured Time range back to the mini-Trend Time range, right-click plot header and select "Apply Mini-Trend Time Range".

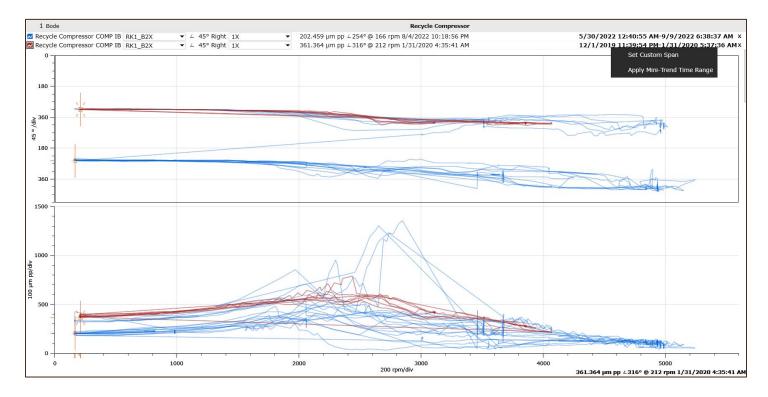


Figure 5-2 Edit Time range from Bode Plot



### **DECISION SUPPORT IS NOW AVAILABLE TO DOWNLOAD**

Valid M&S Agreement Required

Beginning with the System 1 version 22.2, Decision Support Developer is now included with all new orders of System 1. Decision Support and System 1 both remain as separate products. However, they will be delivered through the same download folder in Flexera. Decision Support is now part of the System 1 package, and therefore does not require a separate license for installation. This excludes the Decision Support Analytics (formerly known as InsightPaks) and the DS Analytics library, which also remains as a separate commercial product. For more information on this change, contact your sales manager.



# **ONLY APPLICABLE WHEN UPGRADING FROM VERSIONS PRIOR TO 22.1**

### ! License Changes !

If you upgrade from System 1 21.2 or prior, the existing licenses are not visible in the Licenses tab because of the Publisher Name change to "Baker Hughes". Therefore, **before you install the latest System 1 version**, return your existing licenses to the Licensing Portal. **After the upgrade**, register the License Server again using your existing activation code and relicense System 1. For more details, refer to the System 1 Licensing User Guide.

### ! Postgres version upgrade !

System 1 version 22.1 onwards support Postgres 14 as the historian. Databases on Postgres 11 need to be upgraded to Postgres 14.

While upgrading to Postgres 14, it is recommended to create a backup before installing the latest System 1 version.

When you upgrade to PostgreSQL14 on System 1 22.1 or later, rollback installation to earlier System 1 versions is not allowed. Rollback is only possible by restoring VSS/Acronis backup.

To upgrade the historian from Postgres 11 database to Postgres 14, launch the Database Manager tool and click "Upgrade PostgreSQL Database".

### ! Proficy Obsolescence !

Proficy is no longer supported as historian. Users need to migrate their database from Proficy to Postgres. Users must migrate Proficy databases to PostgreSQL to upgrade to System 1 22.1 or later.

This is applicable for customers who have an older System 1 version with Proficy databases. This does not impact customers who already have PostgreSQL databases as historians.

For more details, please refer to System 1 Help.

**Bently Nevada** 



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