


Vulcan Software LLC

Apex 20.1

-  User Interface
-  Features And Capabilities
-  Database Engine

Introducing Apex 20.1

Apex **20.1** is a “10-year” update. Some of it is conscious and some of it is just timing, but about every 10 years Apex goes through a major evolution.

1990

PURFECT was introduced as a specialty purchasing program for electrical contractors.

2000

Apex migrated to a Microsoft SQL Server database platform. This provided the performance and reliability that we needed to store increasing amounts of data. Many of you have over 2 million database items, over a million vendor prices, 250,000 item cross references, and much more.

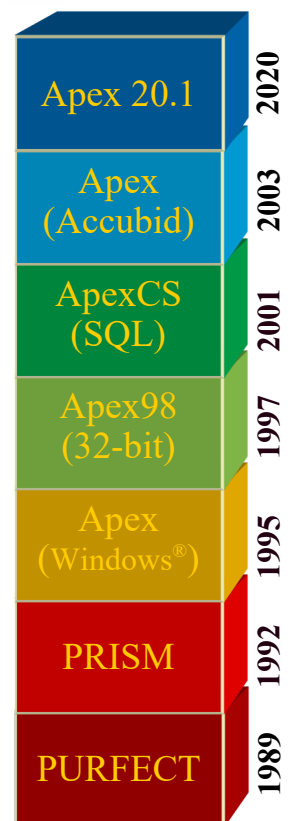
2010

In 2010 Apex introduced the Online Center and “Transmit to Vendor” — business-to-business communications. There was a new P/O Audit, Analysis Cube, Grid sorting/filtering/grouping, the document management system, and the Interactive Grid output.

2020

Everything from the ground up has been upgraded and improved. You’ll read a lot more about this in the following pages.

We hope you enjoy the new Apex **20.1** features. As always, we welcome your feedback.

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Three Views of Apex

One way to look at Apex is to think of it in three cross-sections as shown in the top left picture:

1. What does it look like?
2. What can it do?
3. How is it powered?

The development of Apex **20.1** was focused around these three questions.

First, the database engine was

completely rewritten. This provides Apex with a growth path for newer versions of SQL Server. The funny thing about this is that it was a huge engineering undertaking, but if I did my job correctly you won’t notice a thing.

It is like lifting the house up, rebuilding the foundation, and putting the house back down. Your living room will be right where it was before.

Next are the features. Historically, this has been the focus of most Apex releases. There are lots of new features in **20.1** that you will read about in the upcoming sections of this announcement.

Last but not least is appearance. Apex has a completely redesigned, modernized appearance. There is so much to it that I am dedicating an entire section in this announcement. Welcome to Apex **20.1**!

Modernizing the Apex Appearance

It seems kind of poetic that in 2020 one of the main enhancements to Apex is its appearance. Gone is the battleship gray!

There are many factors in modernizing an application.

Typography

Since the first Windows-based versions of Apex, Microsoft has recommended the use of four different fonts. Unfortunately, depending on when a feature was introduced into Apex you might see at least 3 of them. At first I thought this might be a feature. It made it easy to recognize different types of messages, for example.

Now that I see everything using the same beautiful font I realize that was misguided on my part. This is way better.

Ribbon Menu

The Apex menu system has been revised to use a “Ribbon Menu”. You can see this at the top of the screen. This is the menu that you see in all of the Microsoft Office programs. Now that we all have much more screen space than we did before, we can make it easier and faster for you to make menu selections. Think about having a full menu always available to you. Of course, if you want the space back you can always have Apex collapse it.

Animation

When you hover over a button it will change color. When you select a menu it will slide into view. All of these transitions reduce the abruptness of your actions, and help you focus on what you are trying to accomplish.

Consistency

In previous versions of Apex there were different ways that you can enter dates, depending on what features I thought you needed. There were different memo fields. A lot of things were different.

In Apex 20.1 these things have been standardized. For example, you now have one date entry control to rule them all.

Tabs

At this point everyone is familiar with using a web browser to surf the Internet. Different pages are organized in tabs across the top of the screen. Apex will now let you organize your screens in tabs, just like your web browser.

If you like having the different windows float around you can still do that too. All you need to do is check or uncheck a box on the *Appearance* menu.



The screenshot displays the Apex software interface with a ribbon menu at the top. The ribbon includes tabs for Home, Lists, P/O, Analysis, Receiving, Job, Vendor, Pricing, Item, and Appearance. The Analysis tab is active, showing a ribbon with buttons for Job Detail by P/O, Cost Codes by Job, Cost Code Summary, Cost Code Detail, Invoice, and P/O Invoicing. Below the ribbon, there are several panels: a P/O Selection panel with a table of fields and values, a data table for Vendor Name with columns for 2007, 2008, 2019, and Grand Total, and two pie charts for the years 2007 and 2008. The pie charts are color-coded by vendor: Pacific Power Generation (yellow), Cummins Northwest, LLC (blue), Skyline Electric (red), Stoneway Electric Supply (green), North Coast Electric (orange), MCM Engineering, Inc (purple), and Wesco Distribution Inc (brown).

Vendor Name	2007	2008	2019	Grand Total	%
SKYLINE ELECTRIC		\$94,164.00		\$94,164.00	
STONEWAY ELECTRIC SUPPLY	\$80,019.23	\$62,405.43		\$142,424.66	
NORTH COAST ELECTRIC	\$182,101.08	\$122,750.18	\$4,071.87	\$308,923.13	
MCM ENGINEERING, INC	\$431,336.70			\$431,336.70	
WESCO DISTRIBUTION INC	\$658,556.00	\$191,461.51		\$850,017.51	

Analysis Cube using the Dark Theme

Modernizing the Apex Appearance (continued)

Tip: Apex can instantly change between themes, so don't hesitate to pick different ones over the course of the day.

Themes

I saved the best for last. Those of you using the Apex Web application have noticed that you can dramatically change the appearance of the web pages. With the web application this was a priority because I wanted you to be able to use mobile devices, like an iPad®. Making the screen look like an iPad application helped the user get around, and enabled a good touch-based experience.

I don't see anyone using Apex on a mobile device, but there are still a number of important benefits to changing its appearance.

In the still of the night, about 2AM, I still do a lot of my best programming. At that hour I don't want a white screen blasting at me. Recognizing this, for the last few years all of my programming tools have introduced some sort of "dark theme" in their development environments. Now I want to bring this flexibility to you.

Apex 20.1 ships with five themes out of the box:

Dark: is designed for low lighting conditions, or just because everyone thinks it is cool like the new mobile phone dark themes.

Apex2020: Personally, I love the new Office 2019 appearance. The colors and animations are subtle, allowing you to focus on your work. This is Apex's version of that theme.

McApex: I know that many of you use Mac®s at home, so here is your chance to transform Apex into looking like a Mac application!

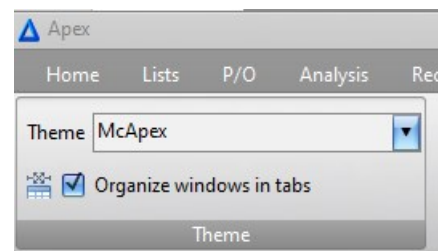
Light: This theme is for brighter lighting conditions. For those of you that have used SAP, this is an Apex version of that look.

Construction: This theme has some yellow highlights making Apex look like you are doing construction. Actually, this *is* what you do.

The screen shots that you will see in the rest of this document will illustrate these different themes.

I think that you will find that these changes are much more than cosmetic. The enhanced readability of the screens, and the ability to change the Apex theme to match your lighting conditions, time of day, or even your mood should make working with the program a more enjoyable experience and reduce fatigue.

Price File Loading using the McApex Theme



Use the new *Appearance* menu to set options

New Apex Features

Auto Updating

Apex is now able to update itself without additional work by your IT department. When an Apex update is available, you are notified and the update downloads in the background. Unlike some other programs that update themselves, you do not have to wait for the update to complete before you can do your work. It will silently download in the background, and the next time you run Apex you will run the new version.

At any time you can see what version you are running by selecting Home -> About as shown on the right.

Date Entry

There is a wide variety of how you can enter dates in Apex. Besides pulling down the calendar and selecting a date, you can:

Enter a date directly. For example, you can enter “1/31”, “01/31/2020”, “9-Aug”, “August/09/2020”. These are just examples. Try the version that works best for you.

Use a “Smart” date. “today”, “yesterday”, “tomorrow”, “Sunday”, “Monday”, “first”, “second”, “bom” (beginning of month), “eom”, “now”. Usually you will only have to type in the first few characters and as soon as Apex understands what you

are trying to enter it will figure out the rest for you.

Use the “+” and “-” keys. This increments and decrements the day by one.

Combine a Smart date with plus and minus. For example, if you want to set the date to two weeks from now you can enter “Today+14”. Apex will figure out the date for you and put it in.

Opening Position

Apex is now much better at positioning itself where it was when you closed it last. Even when you are connecting and disconnecting multiple monitors.



PDF Handling

PDF handling in Apex has been completely rewritten. The original programming was done in 2010, and served us faithfully for many years. Then a couple years ago we encountered new programs generating PDF files that were not compatible with the Apex programming.

Some of you have sent me PDF files to review that were actually corrupt. You can tell by sending

them to some free online web sites that will validate the documents. Apex will not magically make these documents work, but it also will not crash when trying to read them.

I don't want to name the new programs that were causing problems for Apex because there really isn't any fault on their part, but let's just say that they are “stretching” the PDF specifica-

tion. With its completely rewritten PDF programming, Apex is now able to comfortably read and use any of the PDF files that we have encountered.

When saving PDF files you are no longer asked to set a bunch of advanced options. I have never seen an Apex user do anything with those options, so it seemed more like a nag screen that you had to get by than something that was helping you.

After an Apex update you can see the new features by visiting <http://www.apexpurchasing.com/downloads>

Price and Discount Maintenance

The *Price Maintenance* and *Discount Maintenance* selections have been completely rewritten.

They now present a grid view of your prices, even when there is

over one million of them!

There are no separate printing selections for prices or discounts, since both now have “Grid Print” capabilities.

4-Decimal Prices

Distributors are increasingly using 4-decimal prices, even when the unit of measure is “M”! Apex will now allow you to work directly with 4 decimal place prices in P/O Maintenance.

Ribbon Menu

Now that we have larger monitors that can display more information, it makes sense to use “Ribbon” menus. You have seen these menus in all of the Microsoft Office® applications. The idea is that it is easier to click on a menu that is already open when you are performing related tasks.

One of the things that bothered me when Microsoft introduced ribbon menus in their applications is that it seemed like I couldn’t find anything. Here is a quick orientation about how things have moved in Apex.

Discontinued Selections

Backup/Restore. This has been removed. Backing up the Apex database is much easier now than it was when I introduced this, and your IT department should have you covered.

P/O Export. This was a precursor to your accounting system interface and is not needed.

Price and Discount Listing. The Price Maintenance and Discount Maintenance selections can now make their own reports.

Comparative Pricing. This is no longer displayed on the Analysis menu since everyone runs it directly from P/O Maintenance.

File -> Lists

These selections (Contacts, P/O Status, etc.) have been moved to their own *Lists* menu.

Home and Appearance

There are two new menus. The “File” menu has been replaced by “Home”. This makes more sense since you were never dealing with files anyway.

The new “Appearance” menu has selections where you can choose the Apex theme and whether windows should be organized in tabs.

Invoicing Reports

The invoicing reports have been moved from the Vendor menu to the Analysis menu where they make more sense.

Renamed

The wordy “Reset Grid Format Customizations” has been renamed “Reset Saved Settings”. Note that it now resets *all* Apex saved settings — not just the grid formats.

“Via, FOB, Terms” has been renamed “Lookup Lists”. This is now a generic place where you will see all various lists, such as the list of P/O descriptions.

There is a chevron at the bottom right of the ribbon menu where you can collapse it if you want it to look similar to the old Apex menu.

Analysis Cube

There are a number of enhancements to the analysis cube.

One of the most requested features was the ability to sort the data field values (i.e. measurements). Right click on the column title and you will see a new pop up menu. Pick the row or column value that you want to sort. If there are multiple row or column fields then they will all be listed.

Instead of me listing everything new in detail, I will make a video. In the meantime, I would

encourage you to try right-clicking on fields, try the different chart types, and just generally experiment. The Analysis Cube is still one of the most powerful features in Apex. It

can single-handedly reproduce most of the other Analysis reports.

Last but not least, the Invoice Cube has caught up, and now has all of the features of the (P/O) Analysis Cube.

Vendor Name	Grand Total
GEXPRO	\$27
COAST CONSTRUCTION SUPPLY	\$165
SUNBELT RENTALS, INC.	\$550.00
SEQ WAREHOUSE STOCK	\$967.09
STONEWAY ELECTRIC SUPPLY	\$4,439.57
GRAYBAR	\$9,762.84
WESCO DISTRIBUTION INC	\$10,514.90
NORTH COAST ELECTRIC	\$16,223.94
Grand Total	\$42,650.60

Sort "Vendor Name" by This Column
 Remove All Sorting

Online Center

One of the concerns over the last 10 years has been to make sure that we are getting accurate P/O numbers back from the distributors. If the number isn't valid then we often have no way to know what is being acknowledged.

That's why behind the scenes Apex is checking that the P/O number coming in on an acknowledgment *looks* valid. For example, if your P/O number is constructed of two sets of num-

bers separated by a dash, then the Apex programming will reject anything that doesn't look like that. You would be surprised how many orders are acknowledged with a P/O number that looks like "PHIL SAID THIS WAS OK". They are rejected outright, and you don't even see them in the Online Center. The distributor gets immediate feedback that their number is invalid.

However, this may be a bit over-

ly restrictive in 2020. There are often good reasons for making simple corrections yourself. In Apex 20.1 you can now do this.

You can fix the P/O number, job, and work order number before accepting the acknowledgment. I still think it is "best practice" to not let the distributors get lazy about getting your numbers right, but you can make that call.

You can also view *all* fields in the acknowledgment and not just the ones that differ from your order.

The screenshot shows the 'Online Center - Apex' application window. The top navigation bar includes 'Home', 'Lists', 'P/O', 'Analysis', 'Receiving', 'Job', 'Vendor', 'Pricing', 'Item', and 'Appearance'. Below this is a toolbar with icons for 'Quick Code Maintenance', 'DB Item Maintenance', 'DB Item Load', 'Cost Code Maintenance', 'Cgst Code Listing', 'Comparator Load', 'Comparator Maintenance', and 'Commodity Code Maintenance'. The main area displays a table of acknowledgments with columns for Job, PO, Rec Date, Ship Date, Vendor, Vendor Name, and Work Ord. Below the table, there are options to 'Show: Differences Only' or 'All fields' and a dropdown for 'Reject all acknowledgments older than: 2/13/2020'. The detailed view for acknowledgment 191560 shows 'Job 35892 shipping to SEQUOYAH ELEC/AT: BOEING' and 'Vendor 4510 WESCO DISTRIBUTION INC'. The 'P/O Header Info' section shows changes to vendor address, city, state, zip, ship date, ship name, ship address, and P/O message. The 'Decision' section has buttons for 'Accept Acknowledgment' (checked) and 'Reject Acknowledgment', with a 'Confirm Accept/Reject' checkbox.

Job	PO	Rec Date	Ship Date	Vendor	Vendor Name	Work Ord
35050	126926	4/3/2017 11:46:06 ...	3/14/2020	632	FASTENAL	
35892	191560	11/21/2014 10:49:1...	11/21/2014	4510	WESCO DISTRIBUTION INC	00
35892	191560	11/26/2014 6:31:21...	11/26/2014	4510	WESCO DISTRIBUTION INC	00
37318	198732	6/26/2015 5:53:07 ...	3/14/2020	710	GEXPRO	00
391280	560256	4/30/2018 2:22:41 ...	3/14/2020	12345	ELLIOTT ELECTRIC	
48953D	67780	3/6/2020 1:21:49 PM	3/14/2020	9999	ANIXTER TEST	
49139	62387	6/4/2012 12:06:31 ...	8/4/2011	3122	PLATT ELECTRIC	
49139	62387	6/4/2012 12:06:31 ...	8/4/2011	3122	PLATT ELECTRIC	

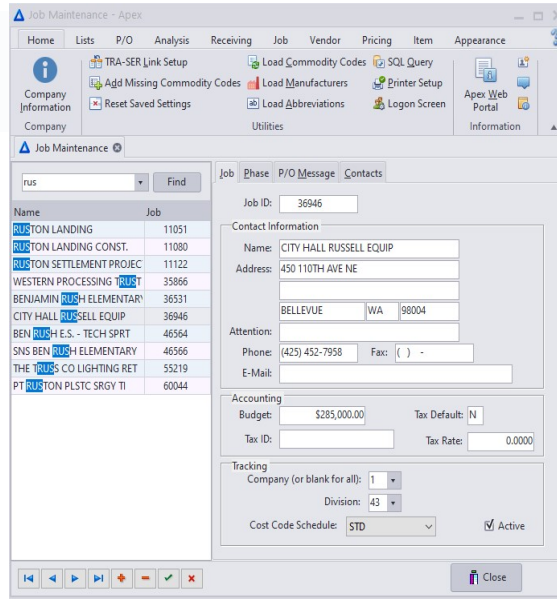
Online Center using the Light Theme

“Find” Panel

Apex 20.1 offers a new way to search using a “Find” panel.

You simply type in some of the characters you are looking for and the find panel will find matching entries — regardless of what column they appear in!

You will see this in many places including Vendor Maintenance, Job Maintenance, Commodity Code Maintenance, and Contact Maintenance.



Job Maintenance using the Apex 2020 Theme

Abbreviations

Version 4 of the Apex Web application introduced a new feature that allows you to maintain abbreviations for db Items. If people in the field are calling a “Steel City 820D” a “Battleship”, you can set that up so that they can search for “Battleship”.

You can make “1.25” equivalent to “1-1/4”, “10-2” equivalent to “10/2”, etc.

This is done in the Web application, but I mention this in the Apex release documentation because don’t forget that Apex uses these abbreviations in the Material Search screen’s keywords. You can set up abbreviations to make your work easier too.

Information for IT

Please share this part with your IT professional. It contains detailed technical information about the new Apex program.

Auto Update

Apex can now automatically update itself. Simple updates that do not require a license or database schema change can be pushed out to the users automatically. This is the preferred method of installing Apex.

During installation, .NET 4.5 or above will be installed. Apex itself does not use .NET but the auto-updating feature does.

I implemented the auto-updating feature in a way that is very similar to how Microsoft implements their “Click-Once” deployments. Apex itself is installed in the user’s AppData\Local\Apex directory. This location is writeable, so Apex can download new pro-

gramming and update itself here.

There is also a version of Apex that you can install that is *not* auto-updating. You might want to do this in a terminal server environment where it is inconvenient to have a separate “Apex.exe” file for each user.

Registry Settings

All Apex configuration options and settings are now stored in the registry. No “.ini” files are used. The path is “HKEY_CURRENT_USER\SOFTWARE\Vulcan Software LLC\Apex”.

Database Engine

Apex now uses a completely rewritten database engine, allowing you to target any supported version of Microsoft SQL Server. Previous versions of Apex could only support up to SQL Server 2008 R2 SP3, released in

September 2014. That SQL Server version has now reached end-of-life. At some point you will want to address updating your version of SQL Server.

It is hard to tell how urgent this might be, but Vulcan Software will help you do the migration when the time comes. I have helped set up SQL Server 2008 R2 instances lately, and I find that the serial number is automatically filled in. So, on one hand Microsoft is saying that this version is no longer supported, and on the other hand they seem to indicate that you can now deploy it for free!

You will notice that Apex and its related programs are larger than their predecessors. This is because the database engine is embedded directly into the executable program, and is not installed separately.

Terminal Servers

Since the new database engine stores

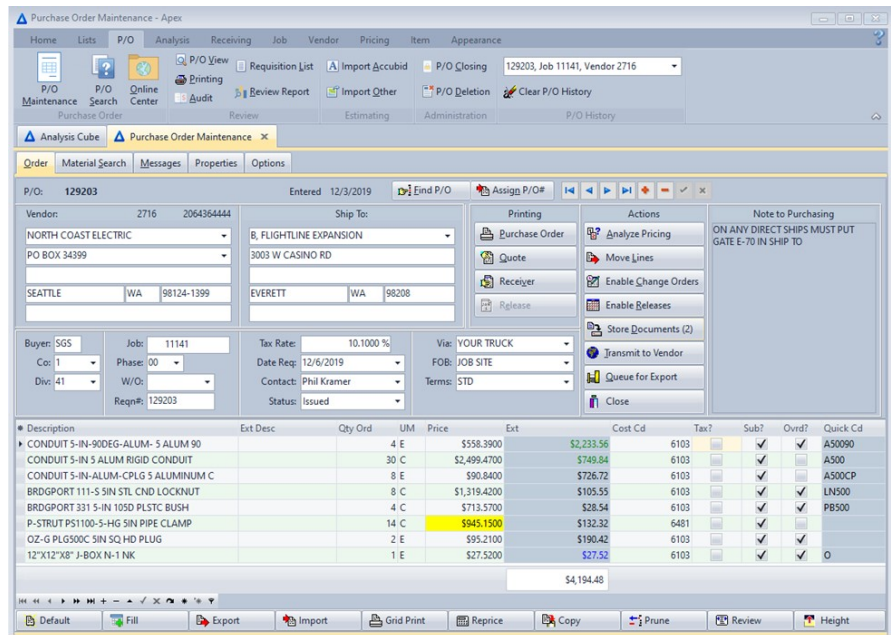
(Continued on page 8)

When Apex auto-updates it does not disturb the user’s work. Downloads and updates happen silently in the background.

Errata

Other changes to Apex include:

- You are now asked to confirm that you want to clear the P/O History list so you don't have to worry about clicking on the button by accident.
- P/O Maintenance now fully supports using the ENTER key to move between columns. I would still encourage you to use TAB.
- You no longer have to add special Microsoft programming to your computer to maintain Apex Advanced Security user accounts, or run a SQL Query.
- The Analysis Cube will no longer let you minimize the chart area to the point that you can't get it back without reopening the screen.
- If you cancel sending an email from the print preview screen you are given an informational message "Email has been canceled as requested" instead of the previous scary looking error message.
- Apex is more responsive when it is busy, allowing you to move screens around, etc.
- The P/O View and Invoice View screens are now titled "Read Only" to avoid confusion.
- There is a new selection allowing you to return to the Apex login screen if required.
- Pasting from TRA-SER no longer creates an erroneous db Item record.
- P/O Line Moving now moves the Contact IDs and the Purchasing Messages.



P/O Maintenance using the Construction Theme

- If a SQL Query returns results they are put in a grid instead of just a raw text box. From there you can export them to Excel or other file formats just like any other grid.
- The "Edit Details" option has been removed from P/O Maintenance. You can now edit details in a straightforward manner by making additional columns visible.

Information for IT (continued)

(Continued from page 7)
the database configuration information separately for each user (and not for the whole machine), your terminal server can target multiple Apex databases. You can now have one terminal server support multiple companies, divisions, or product lines.

Company Information

Past versions of Apex would rewrite the P/O and P/O line audit triggers in the Apex data-

base every time the program was run. Apex **20.1** only writes these triggers when needed.

This means that if Advanced Apex Security is enabled, you don't have to log in as "sa" to make a simple configuration change, like changing the next P/O number.

gRPC

Business-to-business communications with Apex have been using SOAP and REST technologies to communicate. REST (Representational State

Transfer) was based on a 2000 doctoral dissertation by Roy Fielding. It has served us well for many years, but now is starting to show its age.

gRPC was developed at Google in 2015, and has a number of advantages. If you are monitoring Apex communications, or hosting your own business-to-business server, you will start seeing more gRPC-based communications.

We are already starting to work with some of the more technically progressive distributors to migrate to gRPC.