KNOWLEDGE BASE ARTICLE

Employee Directory. Solution Overview

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Table Of Contents

The Vitextra Employee Directory solution includes three web parts:

- Employee Directory
- Employee Directory (Entra ID)
- New Employees

These web parts are designed to enhance the functionality of SharePoint and Microsoft Teams by providing comprehensive employee information and search capabilities.

This article will describe the main features of these web parts.

SharePoint Framework

The Employee Directory app is built using the **SharePoint Framework** (SPFx) and can be hosted on both SharePoint Modern Pages and Classic Pages, as well as **Microsoft Teams**. This means that the app can be used on different platforms without restrictions. The SPFx app runs in the browser in the context of the current user's account.

> 📝 **Note**
>
> The permissions of the SPFx web parts cannot exceed the permissions granted to the current user in **Entra ID**.


SPFx-based app on various platforms

Microsoft Graph

Employee Directory web parts use the **Microsoft Graph API** to retrieve information about users, their presence status in Teams, and their schedules from Outlook. The interaction between the Microsoft Graph API and the web part is done through a native client built into the SharePoint Framework.

Consuming flow is the following:

1 Web parts request a token from Entra ID to interact with the Microsoft Graph
2 Entra ID provides a token based on the permissions granted to the solution
3 The web parts then request data from the Microsoft Graph
4 Microsoft Graph provides the data

Consuming Microsoft Graph API
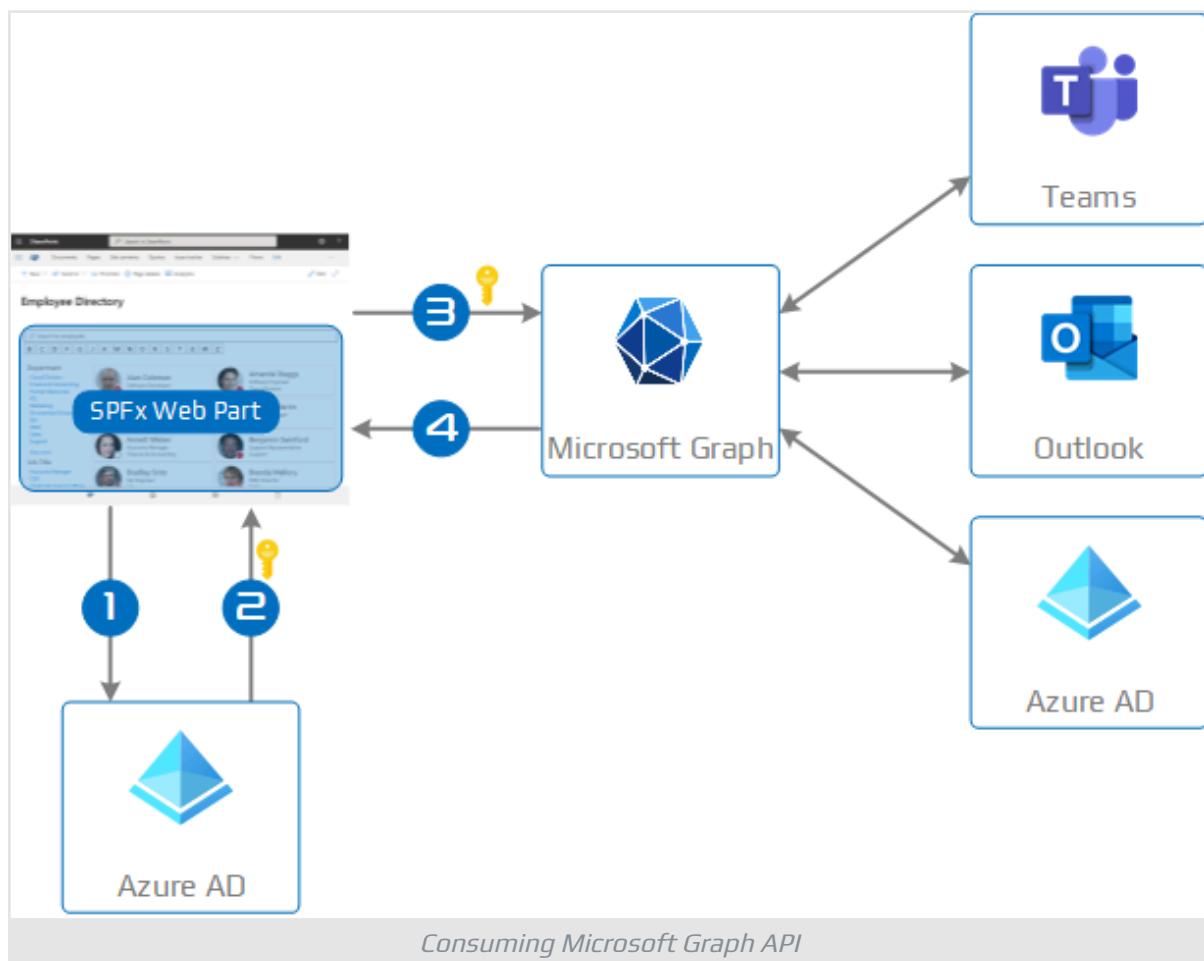
> ⚠️ **Warning**
>
> To consume the Microsoft Graph API, you need to approve necessary API permissions in the SharePoint Admin Center for your solution.

The following permissions are required for the Employee Directory app:

- Directory.Read.All
- User.Read.All
- Presence.Read.All

- Calendars.Read

These permissions allow the web parts to access user information, manager/subordinate relationships, and calendar data.

> 📝 **Note**
>
> These permissions must be approved in the SharePoint Admin Center.

The first two permissions, *Directory.Read.All* and *User.Read.ALL*, are required to get information about the users and their manager/subordinate relationships. *Presence.ReadAll* is required to obtain the current status of a user's presence in Microsoft Teams, while the last permission, *Calendars.Read*, is needed to access data from a user's calendar.

> 📝 **Note**
>
> The Employee Directory only performs read operations on Microsoft Graph.

Web Parts

Employee Directory

The main web page provides a search and information hub for employees within your organization.

Data Source

Employee Directory web part supports both Entra ID and **User Profiles** as a data source. When using User Profiles, the web part retrieves information from the SharePoint Search Service.
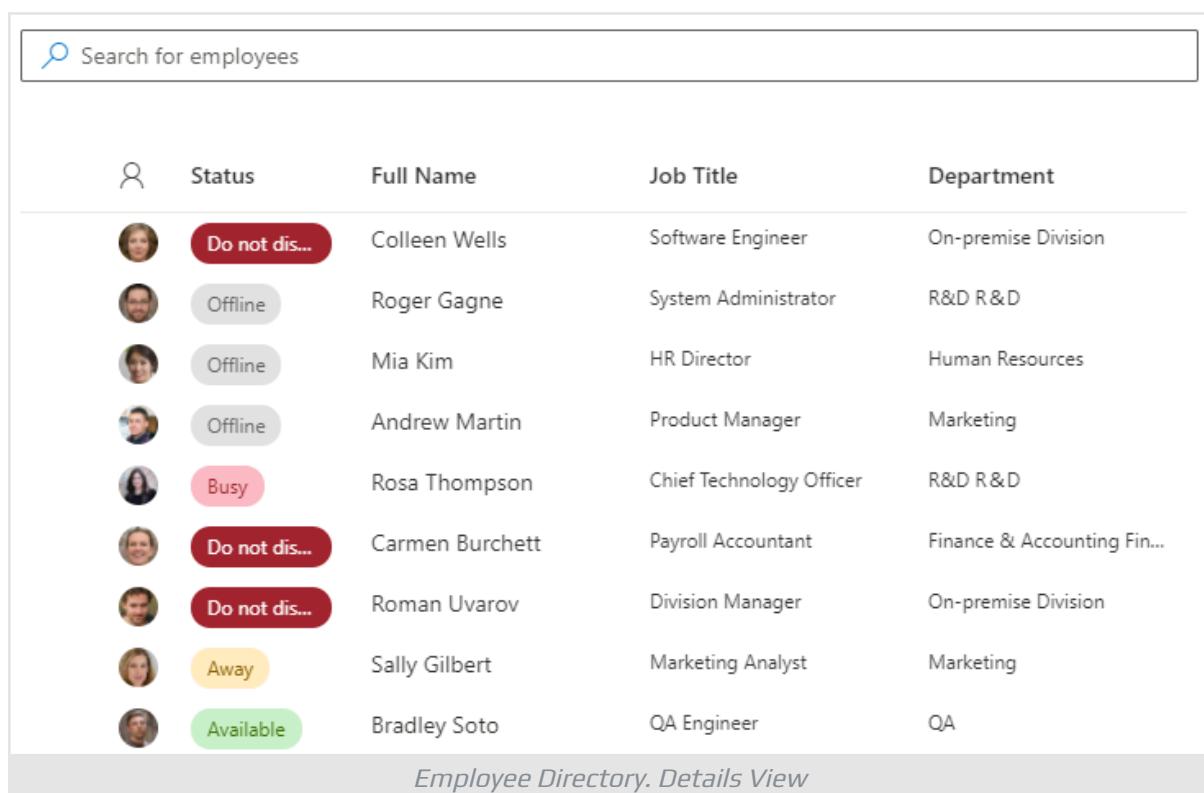
Custom Columns

These web parts support custom attributes for both Entra ID and the User Profile data source. For the user profile data source, you must define custom attributes in the SharePoint search schema. For more information on how to do this, see the [Display Custom Attribute of an Azure AD User in Employee Directory](#) article in the knowledge base.

> 💡 **Tip**
>
> The Employee Directory also supports custom attributes, so you can use these attributes to create custom columns in your web part.

Layout

The web part has two options for displaying search results: **Contact** and **Details**.

	Status	Full Name	Job Title	Department
	Do not dis…	Colleen Wells	Software Engineer	On-premise Division
	Offline	Roger Gagne	System Administrator	R&D R&D
	Offline	Mia Kim	HR Director	Human Resources
	Offline	Andrew Martin	Product Manager	Marketing
	Busy	Rosa Thompson	Chief Technology Officer	R&D R&D
	Do not dis…	Carmen Burchett	Payroll Accountant	Finance & Accounting Fin…
	Do not dis…	Roman Uvarov	Division Manager	On-premise Division
	Away	Sally Gilbert	Marketing Analyst	Marketing
	Available	Bradley Soto	QA Engineer	QA

Employee Directory. Details View

Employee Directory. Contact View

In Contact mode, information about the employee is displayed as cards. You can specify which fields are displayed on each card. The number of fields depends on the size of the card in the web part settings, with a maximum of four fields per employee card in search results.

*The sizes of employee cards in the search results.*
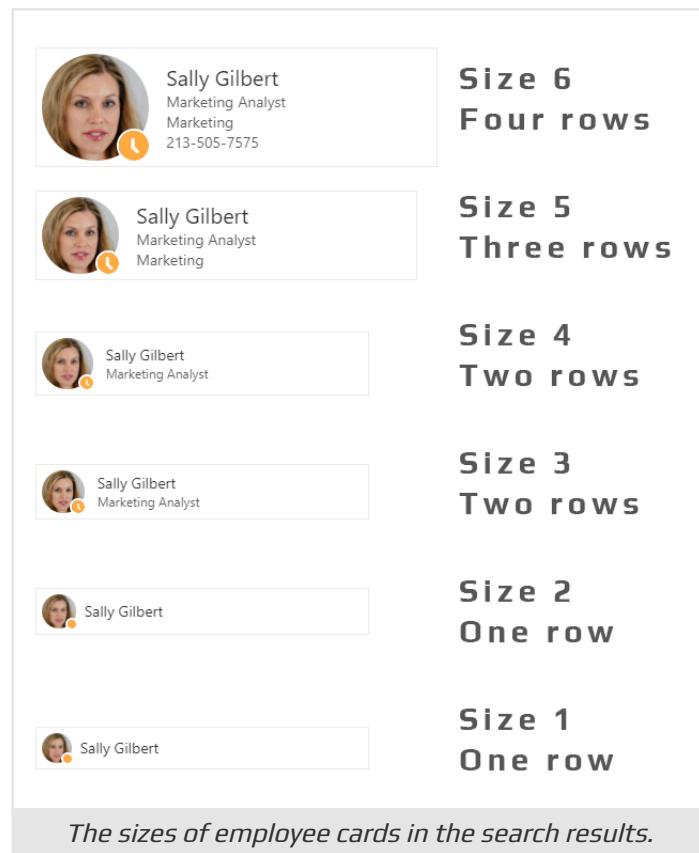
The list view mode allows you to choose which fields are displayed in the list and their order. All columns, except for the image and status columns, are collapsible. These columns are hidden if the available space in the web part is not enough. This approach helps prevent horizontal scrolling and allows the web part to adapt dynamically based on the available space.

💡 **Tip**

The Employee Directory allows you to customize the display of attributes in both the Contact and Details views.

Details Pane

When selecting an employee from the search results, users can view detailed information about the employee. This includes a list of recently edited documents by the employee and information about their availability for that day.

Details Pane
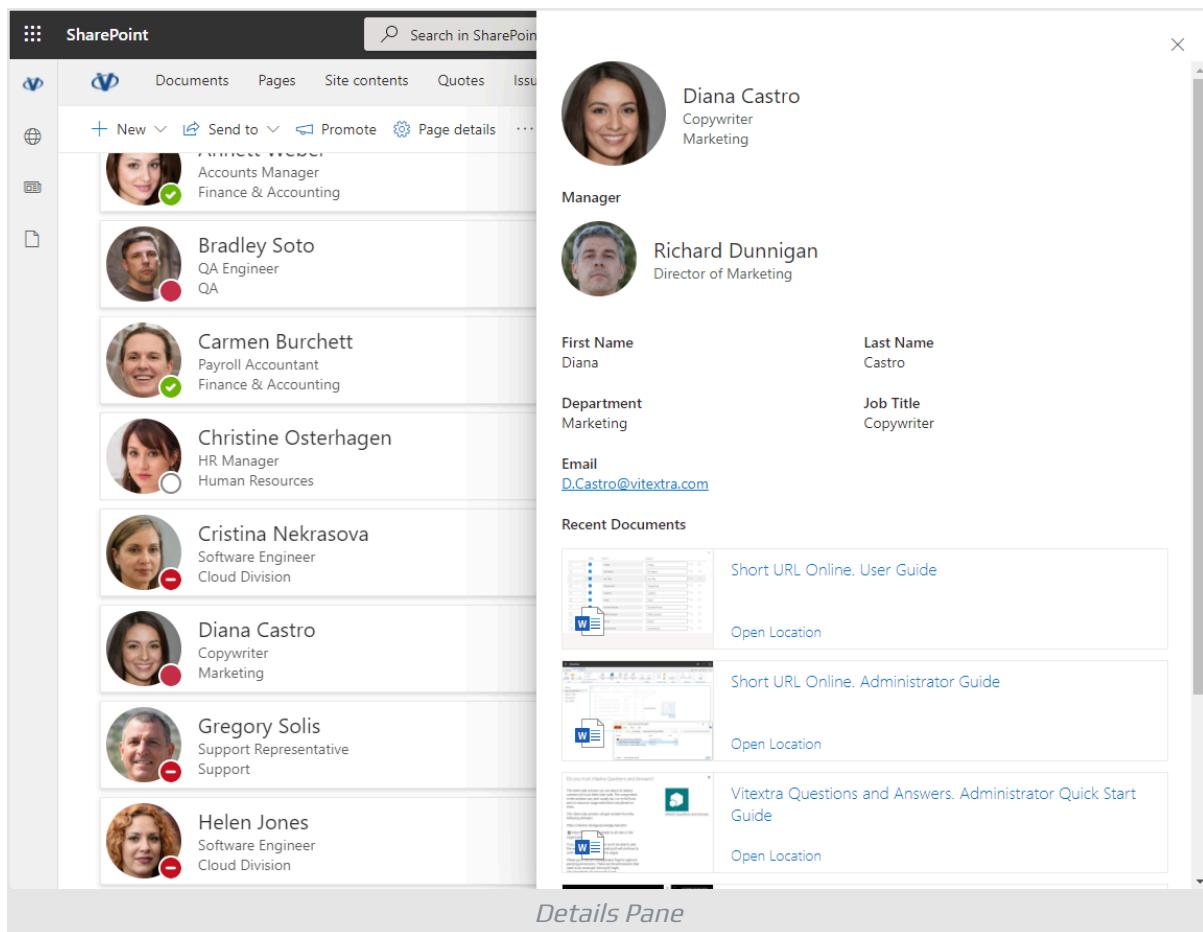
Theme Variants

All web parts in the Employee Directory solution automatically inherit the theme of the site on which they are located. Web parts also support color variations, which you can specify for a section on a modern page. The figure below shows a web part in four different color variations for two different themes of a SharePoint site.

Theme Variants

Additionally, the Employee Directory web part supports Default and Dark themes in Microsoft Teams.

Refinement Panel

The refinement panel in the Employee Directory allows you to filter search results based on selected fields. This functionality is powered by the **SharePoint Search Service** and is available only for User Profiles data sources.

Refinement Panel

The refinement panel offers a wide range of options:

- The order in which fields are displayed
- Showing the number of search results for clarity
- Sorting by name or number of results
- Position of the filter panel (left, right, top)

> 💡 **Tip**
>
> The Employee Directory supports custom user profile attributes for the Refinement Panel.

Export to Excel

Exporting to Excel allows you to save your search results as an Excel file. See Export Employee List into Excel spreadsheet article for more details.

Export to Excel action link

> 📝 **Note**
>
> There are some limitations of exporting functionality:

Employee Directory (Entra ID)

A special version of the Employee Directory web part that only supports Entra ID as a data source. The main goal of this web part is to provide a full-featured search function for users in Entra ID. The appearance of the web part and the layout of search results are fully customizable and correspond to the standard employee directory web part.

Employee Directory (Entra ID)

Behavior & Features

The Employee Directory (Entra ID) web part searches for employees by first retrieving a full list of users from Microsoft Entra ID. This approach allows for the following features:

- **Hiding users without licenses**: Excluding users who don't have assigned licenses from search results.
- **Selecting searchable fields**: Choosing which attributes will be used for searching employees. These attributes can be hidden when displaying search results.
- **Predefined filters**: Specifying a set of filters through the web part's parameters to limit the search scope of employees. These filters are always applied and can't be ignored by users.

The Query Builder is a robust tool designed to help you create complex queries for retrieving detailed user information from Entra ID. Its intuitive interface allows both administrators and developers to construct precise queries without needing extensive knowledge of query languages.

Employee Directory (Entra ID) Query Builder

> 💡 **Tip**
>
> The Employee Directory (Entra ID) allows users to specify a filter using all available attributes, including custom attributes.

Alphabetical Navigation: Alphabetical navigation is automatically generated based on user data in Entra ID. The first letter of an employee's last name is used to create a list of letters.

Refinement Panel: The Employee Directory (Entra ID) allows you to use various employee attributes to create a refinement panel.

> ⚠️ **Warning**
>
> If the number of active users in Entra ID exceeds 2000, it may take more than one second to initialize the web part on the page.

New Employees

The "New Employees" web part displays a list of users who have recently been created in Entra ID.

The New Employees Web Part

In the settings of the web page, you can specify the number of employees and the time period that users created in Microsoft Entra ID will be visible.

> 📝 **Note**
>
> The details pane is not currently available for new employees.

Conclusion

The Vitextra Employee Directory solution offers a robust and versatile tool for managing and accessing employee information within SharePoint and Microsoft Teams. By leveraging the power of the SharePoint Framework and Microsoft Graph API, it ensures seamless integration and comprehensive data retrieval from Microsoft Entra ID.

The solution's flexibility, with features like customizable views, theme variants, and export capabilities, makes it an invaluable asset for organizations looking to enhance their internal communication and collaboration. As Vitextra continues to innovate, users can look forward to even more enhancements and support for additional features, ensuring the Employee Directory remains a cutting-edge solution for modern workplaces.

Terms

Entra ID
Microsoft Entra ID (formerly Azure Active Directory) is a cloud-based identity and access management service offered by Microsoft. This service allows organizations to efficiently manage and secure their users' identities and access to a variety of resources, both internal and external. These resources include Microsoft 365, the Azure platform, and thousands of other software-as-a-service (SaaS) applications.

Microsoft Graph
REST API secured with Azure Active Directory (Azure AD) and Open Authorization (OAuth 2.0) provides a single endpoint to provide access to data and services in Microsoft 365 such as SharePoint, Outlook, OneDrive, Teams, and others.

Microsoft Teams
A chat-based collaboration platform for business communications with useful features for online meetings, live events, document sharing.

Search Service
SharePoint Search Service Application provides enterprise search functionality, including crawling, indexing, and searching, and allows you to find the most relevant information. The Search Service Application is available for both on-premises SharePoint Server deployment and SharePoint Online.

SharePoint Framework (SPFx)
Model for building client-side web-part, components, and extensions for SharePoint Online, SharePoint On-premises, and Microsoft Teams.
SPFx customizations are based on JavaScript and support Modern UI natively.

User Profile
A user profile is a set of properties that describe a user.
The properties include basic information about the user, contact details, and other data. The user profile is used for such services as Delve, My Site, and others