1-Introduction

**PacLineApp** application owners and technical contacts:

**Azure DevOps Resources**

The application team can immediately begin collaborating on software development through source control, work tracking, and continuous integration and delivery of infrastructure and application code to the Azure platform.

* [Repository](https://vs-pioneer.visualstudio.com/project0/_git/Crop-PacLineApp)
* [Build](https://vs-pioneer.visualstudio.com/project0/_build?definitionId=1766)
* [Release](https://vs-pioneer.visualstudio.com/project0/_release?_a=releases&view=mine&definitionId=1090)

**Azure Resource Groups**

The Azure resource groups are containers for your applications' environments where your infrastructure and application code are deployed for your application.

* [Crop-PacLineApp-DEV](https://portal.azure.com/#resource/subscriptions/1758306f-9d59-40af-8278-877608038055/resourceGroups/Crop-PacLineApp-DEV/overview)
* [Crop-PacLineApp-PROD](https://portal.azure.com/#resource/subscriptions/b05b3068-092e-4925-b0fb-d20816b45c91/resourceGroups/Crop-PacLineApp-PROD/overview)

 and

* [Crop-PacLineDB-DEV](https://portal.azure.com/#resource/subscriptions/1758306f-9d59-40af-8278-877608038055/resourceGroups/Crop-PacLineDB-DEV/overview)
* [Crop-PacLineDB-PROD](https://portal.azure.com/#resource/subscriptions/b05b3068-092e-4925-b0fb-d20816b45c91/resourceGroups/Crop-PacLineDB-PROD/overview)

**Data Authorization Groups**

These Azure Active Directory security groups are used to provide access to Azure data storage resources like Azure SQL DB, MySQL, PostgreSQL and Storage Blob Data. These groups can be used to provide access to Azure service principals like managed identities. Application owners are the owners of these groups and manage the members of the groups through the Azure portal. See reference [Add or remove group members using Azure Active Directory](https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-groups-members-azure-portal)

* [Crop-PacLineApp-DEV-DATA-CONTRIB](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/037a27f1-9db5-4f8a-a116-6590ce3de78e)
* [Crop-PacLineApp-DEV-DATA-READER](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/61dd973b-2e47-4787-91a6-a5f6fdf92648)
* [Crop-PacLineApp-DEV-DATA-OWNER](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/8e4c38f8-21d7-4fe0-ab5c-f57fb4e455c8)
* [Crop-PacLineApp-PROD-DATA-CONTRIB](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/5d8c888d-2410-4676-af29-38a68af9e528)
* [Crop-PacLineApp-PROD-DATA-READER](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/8711715b-d206-4ede-baa2-c1cf06502ca0)
* [Crop-PacLineApp-PROD-DATA-OWNER](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/5875c6c7-2b09-416a-b1e5-8633b941a441)

and

* [Crop-PacLineDB-DEV-DATA-CONTRIB](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/ab0d832d-19ab-4a20-a427-555f906064ee)
* [Crop-PacLineDB-DEV-DATA-READER](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/88f16c27-7eaf-4b5c-9b18-9e9cd5c03558)
* [Crop-PacLineDB-DEV-DATA-OWNER](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/48bdb8a3-3683-420b-8704-7be70e854d76)
* [Crop-PacLineDB-PROD-DATA-CONTRIB](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/e798e1ff-7477-4740-ac6a-ceb6eb40b526)
* [Crop-PacLineDB-PROD-DATA-READER](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/3381e5c6-9205-4763-94bb-8a7718d010d0)
* [Crop-PacLineDB-PROD-DATA-OWNER](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/b11874bd-12c7-4459-b6bf-d73fd025017e)

**Network Security Groups**

Each environment for your application has been assigned a subnet for communication with the Corteva network, both Corteva Azure virtual networks and Corteva on-premises networks. Each subnet has a network security group assigned to it and that allows you to control communication to and from your application.

There are base rules for the network security groups that enable certain traffic by default. You can request additional network security group rules specific to your application’s requirements, and when approved they will automatically be applied to your NSG.

For more information on requesting NSG rules for your application go [here](https://agcompany.sharepoint.com/teams/azure_arm_provisioning/KnowledgeFAQ/Lists/Posts/Post.aspx?List=ac0069af%2De5ab%2D4d1f%2Db6cb%2Dc97bd31becf2&ID=149&Web=d1c9892e%2D7482%2D4760%2Db460%2Dd622ffba1c29).

To request a NSG rule go [here](https://agcompany.sharepoint.com/teams/azure_arm_provisioning/Lists/AgCo%20%20Network%20Security%20Group%20Change%20Requests/AllItems.aspx).

You can view the current rules for your application environments below. *NOTE: All application team groups and additional reader groups are given Reader on these NSGs*

* **DEV**: [NSG\_10.41.130.32\_27](https://portal.azure.com/#@3e20ecb2-9cb0-4df1-ad7b-914e31dcdda4/resource/subscriptions/1758306f-9d59-40af-8278-877608038055/resourceGroups/AG_EMEA_WESTEUROPE_PPE_01_NSG/providers/Microsoft.Network/networkSecurityGroups/NSG_10.41.130.32_27)
* **PROD**: [NSG\_10.41.65.96\_27](https://portal.azure.com/#@3e20ecb2-9cb0-4df1-ad7b-914e31dcdda4/resource/subscriptions/b05b3068-092e-4925-b0fb-d20816b45c91/resourceGroups/AG_EMEA_WESTEUROPE_PRD_01_NSG/providers/Microsoft.Network/networkSecurityGroups/NSG_10.41.65.96_27)

and

* **DEV**: [NSG\_10.41.130.64\_27](https://portal.azure.com/#@3e20ecb2-9cb0-4df1-ad7b-914e31dcdda4/resource/subscriptions/1758306f-9d59-40af-8278-877608038055/resourceGroups/AG_EMEA_WESTEUROPE_PPE_01_NSG/providers/Microsoft.Network/networkSecurityGroups/NSG_10.41.130.64_27)
* **PROD**: [NSG\_10.41.65.128\_27](https://portal.azure.com/#@3e20ecb2-9cb0-4df1-ad7b-914e31dcdda4/resource/subscriptions/b05b3068-092e-4925-b0fb-d20816b45c91/resourceGroups/AG_EMEA_WESTEUROPE_PRD_01_NSG/providers/Microsoft.Network/networkSecurityGroups/NSG_10.41.65.128_27)

**Application Team Groups**

Provides four roles to allow team segregation of duties performed during the application lifecycle. Membership changes to the groups requires group owner approval and are administered by LanSec.

The application team assigned to this application is **PacLine**

* [VSTS-PacLine-Readers](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/b41d1fd3-808d-43cd-93da-6e707dfb87bd)
* [VSTS-PacLine-Contributors](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/9ef9aaf0-49ae-4328-99f0-f9e3843f6253)
* [VSTS-PacLine-ReleaseManagers](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/558657e7-f0bd-4b3d-a8e6-33f4f4a41d8b)
* [VSTS-PacLine-Devops](https://portal.azure.com/#blade/Microsoft_AAD_IAM/GroupDetailsMenuBlade/Overview/groupId/8a656c26-7697-4bb8-86cd-b9aaecf751bc)

For helpful information on how to be successful in Azure visit the [Azure Knowledge & FAQ](https://vs-pioneer.visualstudio.com/project0/_wiki/wikis/project0.wiki/406/Azure-Knowledge-FAQ) wiki

Do not reply to this email. For assistance, please reach out to the [Cloud Engineering Team](mailto:dl-cloudengineeringteam@corteva.com).

|  |  |  |
| --- | --- | --- |
| **Resource Group** | **VM Name** | **IP Address** |
| Crop-PacLineApp-DEV | PHAZD0974WS01 | 10.41.130.36 |
| Crop-PacLineApp-PROD | PHAZP0974WS01 | 10.41.65.100 |
| Crop-PacLineDB-DEV | PHAZD0975DB01 | 10.41.130.68 |
| Crop-PacLineDB-PROD | PHAZP0975DB01 | 10.41.65.132 |

DB servers replaced by PHAZD0828DB02 and PHAZP0828DB02

Security groups to control servers:

|  |
| --- |
| [SA-S-AZR1-PHAZD0975](https://myad.phibred.com/MyAD/redirect.ashx?dn=CN%3DSA-S-AZR1-PHAZD0975%2COU%3DJDC1%2COU%3DUS%2COU%3DPioneer%2COU%3DGroups%2CDC%3Dphibred%2CDC%3Dcom) |
| [SA-S-AZR1-PHAZP0975](https://myad.phibred.com/MyAD/redirect.ashx?dn=CN%3DSA-S-AZR1-PHAZP0975%2COU%3DJDC1%2COU%3DUS%2COU%3DPioneer%2COU%3DGroups%2CDC%3Dphibred%2CDC%3Dcom) |
| [SA-S-AZR1-PHAZD0974](https://myad.phibred.com/MyAD/redirect.ashx?dn=CN%3DSA-S-AZR1-PHAZD0974%2COU%3DJDC1%2COU%3DUS%2COU%3DPioneer%2COU%3DGroups%2CDC%3Dphibred%2CDC%3Dcom) |
| [SA-S-AZR1-PHAZP0974](https://myad.phibred.com/MyAD/redirect.ashx?dn=CN%3DSA-S-AZR1-PHAZP0974%2COU%3DJDC1%2COU%3DUS%2COU%3DPioneer%2COU%3DGroups%2CDC%3Dphibred%2CDC%3Dcom) |

Other security groups :

[PACLINE\_USERS](https://myad.phibred.com/MyAD/redirect.ashx?dn=CN%3DPACLINE_USERS%2COU%3DJDC1%2COU%3DUS%2COU%3DPioneer%2COU%3DGroups%2CDC%3Dphibred%2CDC%3Dcom)

[PACLINE\_ADMIN](https://myad.phibred.com/MyAD/redirect.ashx?dn=CN%3DPACLINE_ADMIN%2COU%3DJDC1%2COU%3DUS%2COU%3DPioneer%2COU%3DGroups%2CDC%3Dphibred%2CDC%3Dcom)

Service account name : PACLINE\_int

Ports configuration:

2-PacLine Installation and Configuration

2.1 Overall structure of the application

*The application is composed of three main parts: a frontend to manage human-machine interface. A backend to communicate the frontend and the database, which is responsible for executing the SQL queries and formatting the received data before sending it to the frontend. And a database to store the application’s data.*

*The database is composed of the following tables, with their columns. Detailed information on the table’s implementation can be found in the file* ***DB\_Script.sql*** *on the root of the project.*

1. ***machine\_component :***
2. ***users:*** *Stores data related to users, such as login, password, its working site, and production line.*
3. ***worksite:*** *Stores worksites names*
4. ***teamInfo:*** *Stores information related to a team, such as its working site, start and end of working shifts.*
5. ***ole\_productionline:*** *Stores the productions lines, its name and working site.*
6. ***ole\_machines:*** *Stores machine related data, such as its name, operation, manufacturer, model, and to which working site and production line it belongs*
7. ***ole\_formats:***
8. ***ole\_speed\_losses:*** *Stores information about declared speed loss events*
9. ***ole\_assignement\_team\_pos***
10. ***ole\_pos:*** *Stores information about production orders and its attributes such as availability, performance, quality and OLE.*
11. ***ole\_planned\_events:*** *Stores declared planned events during a PO.*
12. ***ole\_unplanned\_event\_changing\_clients:*** *Stores declared unplanned events whose type is changing clients.*
13. ***ole\_unplanned\_event\_changing\_formats:*** *Stores declared unplanned events whose type is chaging formats.*
14. ***ole\_unplanned\_event\_cips:*** *Stores declared unplanned events whose type is cleaning in place (CIP)*
15. ***ole\_unplanned\_event\_unplanned\_downtime:***
16. ***ole\_downtimeReason:***
17. ***ole\_products:*** *Stores Corteva’s product database*
18. ***ole\_rejection\_counters:***

2.2 Key files in the application

**Backend:**

*The* ***appsettings.json*** *file in* ***CortevaAppAPI/CortevaApp*** *contains important parameters for the application to work properly, mainly the* ***ConnectionString*** *property that is used to configure the connection to the database.*

*The* ***CortevaApp.csproj*** *file in* ***CortevaAppAPI/CortevaApp*** *contains a description of all backend dependencies and is automatically managed by the .NET packagemanager and install all needed dependencies before execution.*

*The backend was developed using the* ***.NET*** *framework and* ***C#*** *language. Inside the folder* ***CortevaAppAPI*** *there is a project configuration file* ***CortevaApp.sln*** *and a folder* ***CortevaApp*** *containing the source code. The application was developed using the MVC design pattern, so the backend source code is composed of Models and Controllers.*

**Frontend:**

*The fronted was developed using the* ***Vue*** *framework. Source code can be found in* ***CortevaAppUI/src****, the main components can be found inside the* ***components*** *folder and are categorized into* ***AdministratorComponents****,* ***DashbordComponents*** *and* ***UserInputComponents****, which designates respectively the Operator, Supervisor and Administrator interfaces.*

*The* ***package.json*** *file in* ***CortevaAppUI*** *contains a description of all frontend dependencies. This file is automatically managed by NPM and install all needed dependencies before execution.*

*The* ***variables.js*** *file in* ***CortevaAppUI/src*** *contains the address to where the backend requests must be sent, this depends on the deployment environment.*

*The language files can be found in the folder* ***CortevaAppUI/src/locales*** *with a* ***.json*** *file per language.*

**Database:**

*The file* ***DB\_Script.sql*** *contains the necessary SQL commands to recreate the entire database. In this file you can found detailed information on each table implementation such as column types and properties.*

2.3 Functions and sub-programs

***Frontend***

*To run the frontend it is necessary to install* ***Node.js*** *and its package manager* ***NPM****, which usually come together. The command* ***npm run build*** *will compile a optimized version of the frontend that can be deployed.*

***Backend***

*To run the backend it is necessary to install* ***Microsoft .NET Core SDK*** *and the* ***.NET CLI****. The command* ***dotnet run*** *will build the and start the project accordingly to the configuration set in the* ***appsettings.json*** *file located in* ***CortevaAppAPI/CortevaApp****.*

***Database***

2.4 Variables and constants

***Backend:***

*The connection string defined in* ***CortevaAppAPI/CortevaApp/appsettings.json*** *defines the database’s connection properties, which is dependent on the deployment environment.*

***Frontend:***

*The constant* ***urlAPI*** *defined in* ***CortevaAppUI/src/variables.js*** *defines the address to where requests to the backend must be sent.*

2.5 Servers

Microsoft IIS installation

*Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci.*

*Aenean nec lorem. In porttitor. Donec laoreet nonummy augue.*

*Suspendisse dui purus, scelerisque at, vulputate vitae, pretium mattis, nunc. Mauris eget neque at sem venenatis eleifend. Ut nonummy.*

SQL server installation

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*Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci.*

*Aenean nec lorem. In porttitor. Donec laoreet nonummy augue.*

*Suspendisse dui purus, scelerisque at, vulputate vitae, pretium mattis, nunc. Mauris eget neque at sem venenatis eleifend. Ut nonummy.*

Application server installation

*Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna.*

*Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus.*

*Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci.*

*Aenean nec lorem. In porttitor. Donec laoreet nonummy augue.*

*Suspendisse dui purus, scelerisque at, vulputate vitae, pretium mattis, nunc. Mauris eget neque at sem venenatis eleifend. Ut nonummy.*