

Honeywell

THE POWER OF **CONNECTED**

HONEYWELL TRACE™

DOCUMENTATION AND CHANGE MANAGEMENT
SOFTWARE FOR BETTER DECISIONS



R130 Prerequisites Document



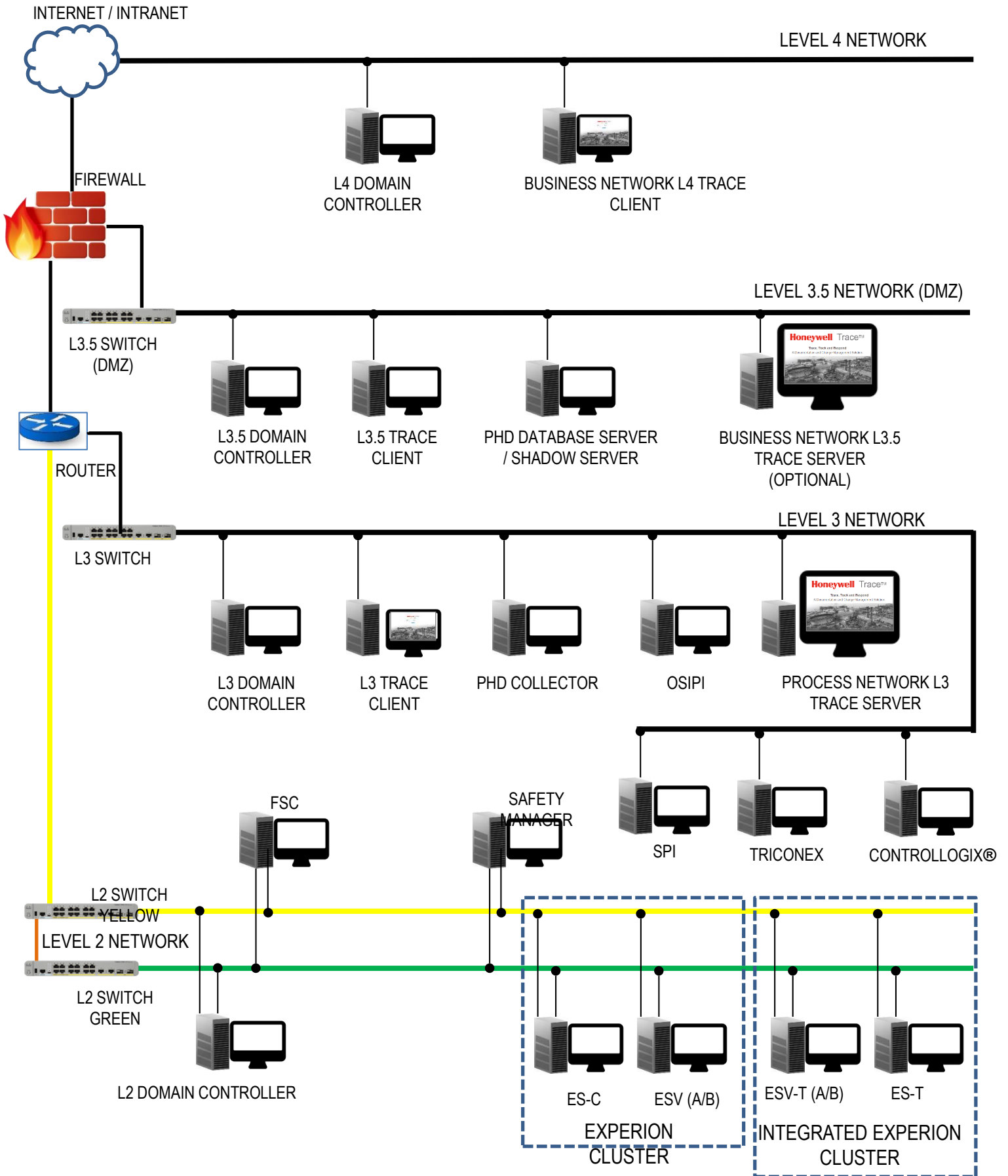
ABOUT THIS DOCUMENT

This document is intended to help users plan a Trace installation.

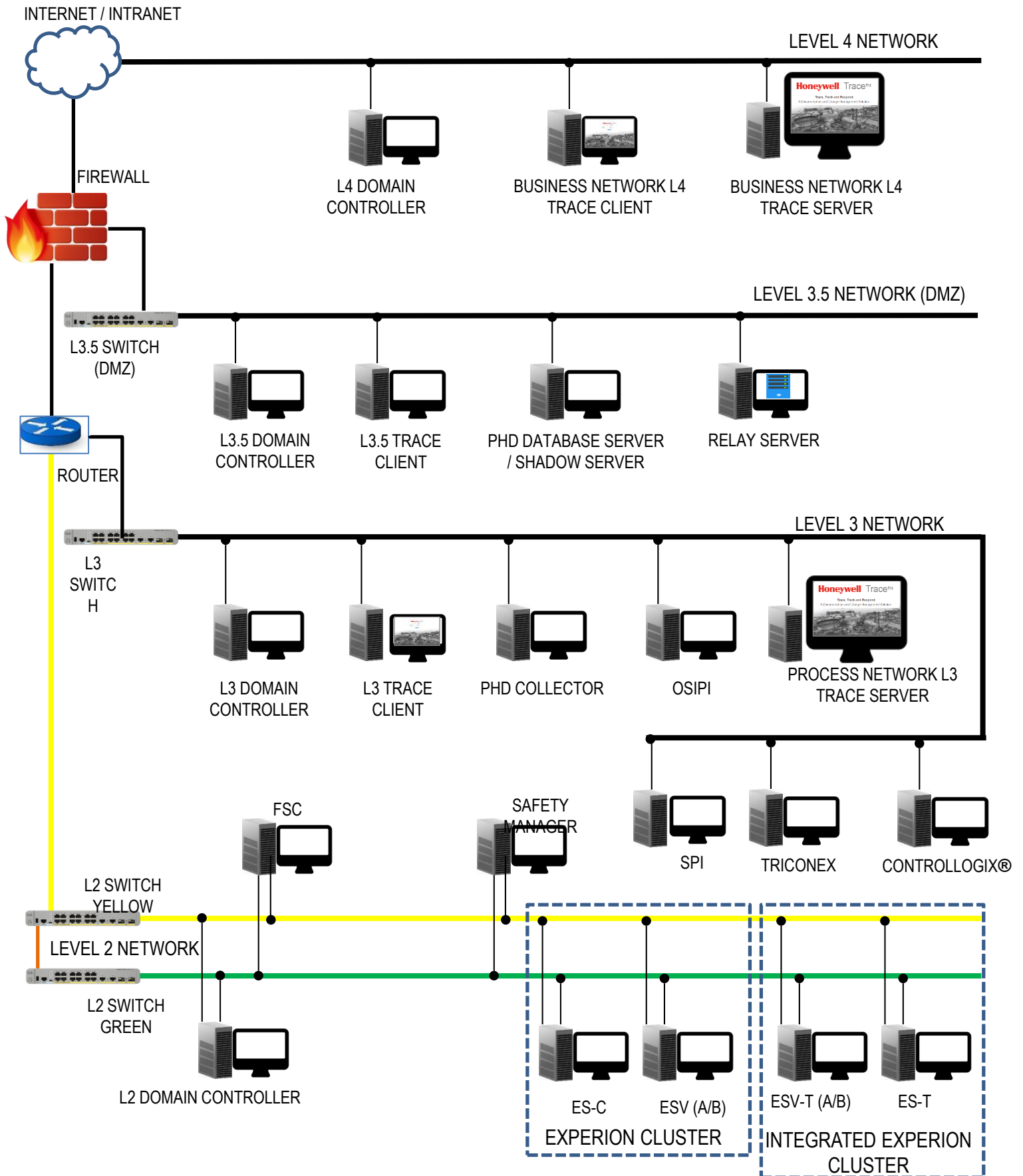
REVISION HISTORY

| Version | Release | Date | Description |
|----------------|----------------|---------------|--|
| A | R130 | January 2019 | Initial release of the document for R130. |
| B | R130 | February 2019 | Added supported versions. |
| C | R130 | February 2019 | Added information related to User mapping. |
| D | R130 | February 2019 | Updated information in Supported Systems section. |
| E | R130 | March 2019 | Updated Cross Domain Access information. |
| F | R130 | November 2019 | Updated Group Policy and Triconex version details. |

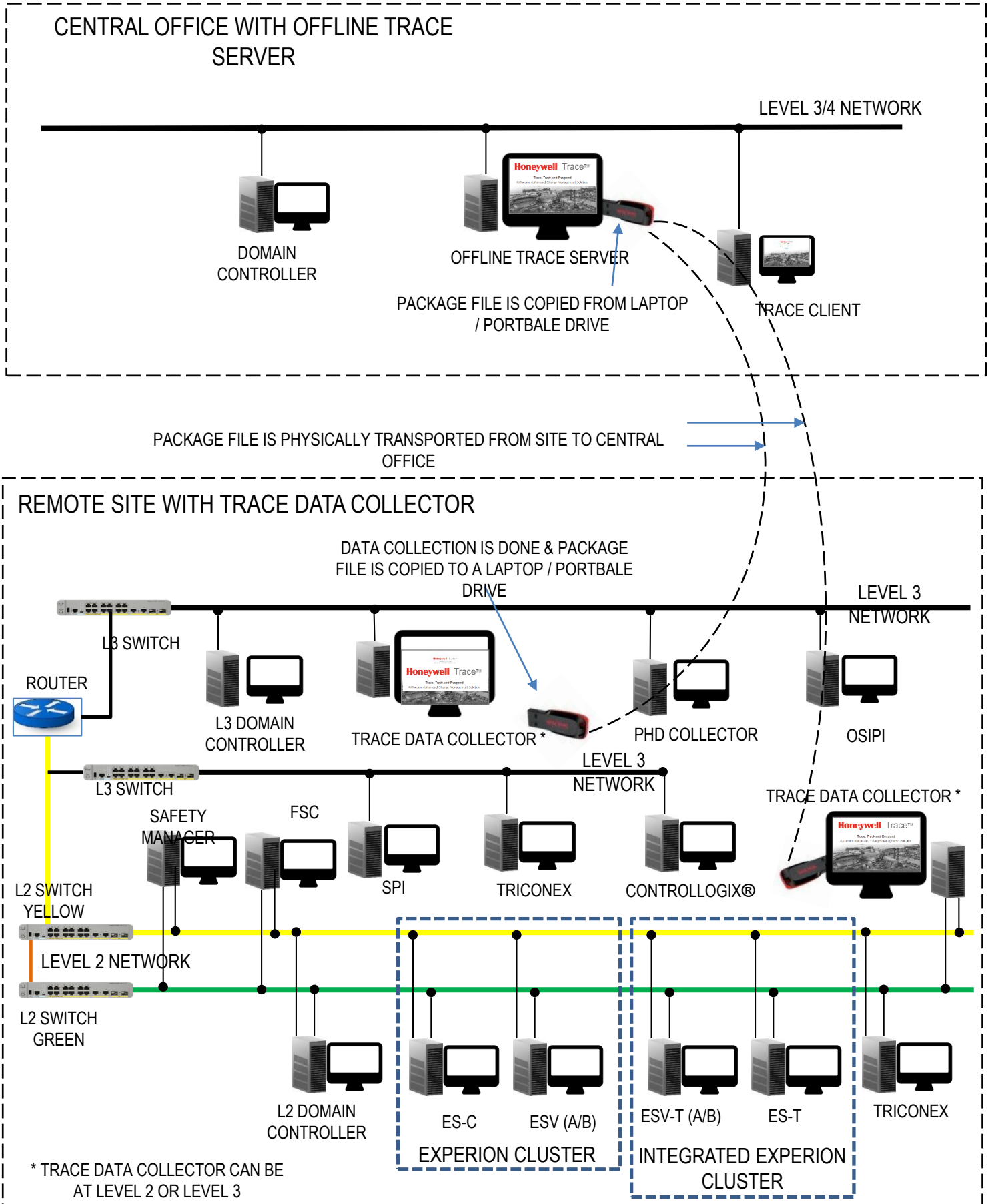
Connected Mode - Honeywell Trace Installed at L3 and L3.5



Connected Mode - Honeywell Trace Installed at L3 and L4 With Relay Server



Honeywell Trace Architecture – Disconnected Mode



PLANNING

Hardware / Software Requirements

| | Trace Server / Offline Trace Server * | | | Trace Data Collector | | Remote Node | |
|------------------------------------|---|--|---|--|---|---|---|
| | Ready (√) | | Ready (√) | | Ready (√) | | Ready (√) |
| Where to install? | | | | | | | |
| | L3 | | | L3 | | Client node of selected system | |
| | L3.5 / L4 | | | L2 | | | |
| Hardware (minimum required) | | | | | | | |
| | For 0 - 200k tags | | For 200k - 500k tags | | | | |
| Server Model | Honeywell Model: MZ-PCSV65 (Dell Model: R740XL) | | Honeywell Model: MZ-PCSV65 (Dell Model: R740XL) | | | | |
| Additional Hard Disk | No additional hard disk required | | No additional hard disk required | | Sufficient disk space to store collected data | | Sufficient disk space to store collected data |
| Additional RAM | 2 x MZ-PCEM44 | | 6 x MZ-PCEM44 | | 500 MB | | 500 MB |
| Virtual machine | | | | | | | |
| | For 0 - 200K tags | | For 200K - 500K tags | | | | |
| Hard Disk | 1 TB | | 1 TB | | | | |
| RAM | 32 GB | | 64 GB | | NA | | NA |
| CPU | 8 Core 8 MB Cache | | 8 Core 2.5 MB Cache/Core | | | | |
| Reservation | 12 GB | | 24 GB | | | | |
| Software (supported) | | | | | | | |
| OS | Microsoft Windows Server 2016 Standard 64-bit | | | Windows 7 (64-bit) Windows 2012 Server Windows 2016 Server | | Minimum: Windows XP Professional SP 3 or later (32 / 64 bit) Recommended: Windows OS later than Win XP | |
| Web browser | Microsoft Internet Explorer 11 Google Chrome V 50 or later | | | Internet Explorer 11 Chrome V 50 or later | | Internet Explorer 11 Chrome V 50 or later | |

* The Offline Trace Server resembles the Honeywell Trace Server in all respects except that you cannot perform data collection on it as it does not have network connectivity with remote nodes. Instead, the package created by the Trace Data Collector is uploaded to create the snapshot.

PLANNING

Types of Licenses

| Trace Package | Concurrent Users | Features |
|---------------|------------------|---|
| Bronze | 5-25 | Tag References Search, Network View, Logical View, Hardware View, Create and Run Query, and Report Generation. |
| Silver | 5-25 | It has all the features of Bronze package. In addition to that, it also includes features such as, On Demand System Performance Reports, Change Detection, Channel Spare Management, and Defect Management. |
| Gold | 5-25 | It has all the features of Silver package. In addition to that, it also has Workflow and Change Management feature. LIVE System Performance Analytics and Monitoring feature. |

Note: L4 access is optional for all the packages. Users can buy L4 access feature separately irrespective of the package they have.

PLANNING

USER GROUPS / USERS

| | Domain topology | Workgroup topology |
|---|---|--|
| Trace Server L3 and L3.5 (System Format) Note: If the default language is not set to English (United States), then change the format to English (United States) . | English (United States) | English (United States) |
| Node on which Trace is installed | Must be joined to Domain and remain connected. | Should be part of the private network. |
| Person doing the installation must | Run as Administrator | Belong to Local Administrators group |
| ptwebuser (you can give any name) | This account is used to run Trace application. Manually create the user in the domain controller. | Created by installer. (manual creation not required) |
| Mapping user/group to Trace Roles | Create users if they are not created for Trace Application access. Add the user/user groups to Local Trace Server groups. | Create users if they are not created for Trace Application access Manually add the user/user group to the below mentioned groups <ul style="list-style-type: none">• LSS-PT Engineers• LSS-PT Managers• LSS-PT Product admin• LSS-PT Report Users |

Note:

1. Trace Gold is supported only in the Domain topology.
2. SPA feature is supported only in Domain topology. But SPA will not be available in L4.

PLANNING

REMOTE NODE – SUPPORTED SYSTEMS & LICENSES REQUIRED

| System | Supported Version | Description | License Requirement |
|------------------------------------|--|--|---|
| Experion PKS Process Server | <ul style="list-style-type: none"> • R311.1 • R400 • R410 • R430 • R431 • R500 • R501 • R510 | Flex node (You can either install a Remote Node package or Disconnected Mode. NOT both.) | 1 license of Class 1 per Experion cluster |
| | | ES-C node | |
| TPS | R6xx or later | ES-T node | 1 license of Class 1 per LCN cluster |
| | | GUS node (running Windows XP SP3 or later) | |
| Experion Integrated TPS | R410.9 or later | ES-T node ATTENTION: GUS node is not supported for this system. | 1 license of Class 0 Experion Integrated TPS = 01 TPS + 05 Experion cluster |
| Safety Manager | <ul style="list-style-type: none"> • R13x.x • R14x.x • R15x.x • R16x.x | Safety Builder node. For manual collection, any node on which plant data is copied. | 1 license of Class 2 per Safety Manager plant |
| Triconex | Tristation v4.6, v4.14 and v4.16 | Tristation node Plant data to be manually copied from the nodes. | 1 license of Class 2 per controller |
| PHD | R300 R310 R320 R340 | PHD Data Collector node. | 1 license of Class 3 per PHD database (shadow server or local) |
| FSC | R6xx or later (on Trace R121 Patch1 or later) | FSC Builder node For manual collection, any node on which plant data is copied. | 1 license of Class 2 per controller |
| OSIPI | 2015 version (3.4.395) | OSIPI node where database is available | 1 license of Class 3 per OSIPI database server |
| SPI | SPI 2009 SP4 HF10 Supported SPI database type is SQL Server | SPI node | 1 license of Class 2 per cluster |
| ControlLogix® | <ul style="list-style-type: none"> • RSLogix 5000 (version 17 to Version 20) • Studio 5000 (version 21 to Version 30) | Allen-Bradley ControlLogix Node where L5X file is available. | 1 license of Class 3 per Controller |

FIREWALL CONFIGURATION

Firewall configuration for L3.5 (applicable for L3.5/L4 access)

| Source IP | Protocol | Destination IP | Port | Reason |
|--------------------------|----------|-------------------|------|--------------------|
| L3 Trace server | TCP | L3.5 Trace Server | 443 | DB Sync |
| L3.5 Trace server | TCP | L4 Client | 443 | To access web url. |

Firewall configuration for L3

| Source IP | Protocol | Destination IP | Port | Reason |
|-----------------------------|----------|-----------------------------------|----------|---|
| L3 Trace server | TCP | L3 Remote Node | 5986 | Secure Powershell port to trigger Trace Data Collection. |
| L3 Trace Remote Node | TCP | L3 Trace Server | 445, 139 | SMB port for Trace remote to share the data in Trace server. |
| L3 Remote Node | TCP | L3 EMDB Server | 1433 | SQL port for Trace Remote Node to connect to EMDB and fetch EMDB information. |
| L3 Trace Server | TCP | L3 Trace Remote Node (Windows XP) | 5985 | Secure Powershell port to trigger Trace Data Collection. |

Firewall configuration for Data Collection between Trace server and Remote node

If there is a firewall configuration between Trace server and remote node, then follow the below configuration.

| Source IP | Protocol | Destination IP | Port | Reason |
|------------------------|----------|--------------------------------|----------|---|
| Trace server | TCP | Trace Remote Node | 5986 | Secure Powershell port to trigger Trace Data Collection. |
| Trace server | TCP | Trace Remote Node (Windows XP) | 5985 | Secure Powershell port to trigger Trace Data Collection. |
| TraceRemoteNode | TCP | Trace Server | 445, 139 | SMB port for Trace remote to share the data in Trace server. |
| TraceRemoteNode | TCP | EMDB Server | 1433 | SQL port for Trace Remote Node to connect to EMDB and fetch EMDB information. |

Important notes:

The following are the Group Policies that must be enabled/disabled in the Trace Remote Node/Domain for Trace Data Collection to work correctly:

- Trace Remote Node is in Domain -> enable these policies in Domain Controller
- Trace Remote Node is in Workgroup -> it needs to be checked on Local Machine

Enabling Windows Remote Server

Enable Windows Remote Server Management with IPv4 filter as 'TraceServerIP' or 'Offline Datacollector NodeIP' or you can enter an asterisk (*).

To enable:

1. Run -> gpedit.msc.
2. Navigate to Computer Configuration -> Administrative Templates -> Windows Components -> Windows Remote Management (WinRM) -> WinRM Service.
3. Enable the policy "Allow Remote server management through WinRM" with IPv4 filter set to * or **TraceServerIP**.

OR

Select "Not Configured".

Note: This policy can either be enabled or not configured. It should not be disabled.

Enabling Remote Shell Access from Domain

To enable:

1. Run -> gpedit.msc
2. Navigate to Computer Configuration -> Administrative Templates -> Windows components -> Windows Remote Shell
3. Enable the policy "Allow Remote Shell Access"

OR select "Not Configured".

Note: This policy can either be enabled or not configured. It should not be disabled.

Disabling Policy - Network access: Do not store network passwords

To disable:

1. Run -> secpol.msc
2. Navigate to Local Policies -> Security Options
3. Disable the policy "Network access: Do not allow storage of passwords and credentials for network authentication".

Note: This check might have been done in Trace installer as part of prerequisite validation.

CROSS DOMAIN ACCESS – ENABLE COMMUNICATION BETWEEN L3.5 & L4 (applicable for L3.5/L4 access)

| | Domain topology | Workgroup topology |
|---------------------------------|---|---|
| If installing on L3.5/L4 | <p><u>When both Domain Controller and Trace Server are on L3.5/L4</u></p> <ul style="list-style-type: none"> For new users on L3.5/L4 Domain Controller, user can create user/customized groups. For these new users on the L3.5/L4 Domain Controller, user can manually link the user/user groups to Local Trace Server LSS-PT groups <p><u>When Domain Controller is on L4 and Trace Server is on L3.5</u></p> <ul style="list-style-type: none"> Establish trust between L3.5 Domain Controller and L4 Domain Controller. This is to access data from L4 client nodes. You can manually add the L4 user/user groups to L3.5 Domain Controller. | <p>For new users, create user/customized groups and manually link the groups to below respective groups:</p> <ol style="list-style-type: none"> LSS-PT Engineers LSS-PT Managers LSS-PT Product admin LSS-PT Report Users |

Update Hosts File

| In domain topology, to communicate between | Update Hosts file on L3 node with this information |
|---|--|
| L3 node - L3.5 node | <p>10.10.10.XX L3-5-Trace.domain.com where, 10.10.10.XX is the IP address of the L3.5 Trace node L3-5-Trace.domain.com is the Fully Qualified Domain Name (FQDN) of the L3.5 Trace node Note that the IPs and names mentioned are examples only.</p> |

CROSS DOMAIN ACCESS – ENABLE COMMUNICATION BETWEEN L3 & L4 USING RELAY SERVER (applicable for L3.5/L4 access)

| | Domain | Workgroup |
|----------------------------|---|--|
| If installing on L4 | <ul style="list-style-type: none"> Install and configure Relay Server node at the L3.5 level (DMZ) On L4 Domain Controller, create a user and map the domain users to Trace machine local groups. | Install and configure Relay Server node at L3.5 (DMZ). |

Update Hosts File on the L3 and Relay Server node

| In domain topology, to communicate between | Update Hosts file on L3 node with this information |
|--|---|
| L3 node – L4 node | <p>10.10.10.YY L4-Trace.domain.com where, 10.10.10.YY is the IP address of the Relay Server L4-Trace.domain.com is the Fully Qualified Domain Name (FQDN) of the L4 Trace node On the Relay Server</p> <p>11.11.11.XX L4-Trace.domain.com where, 11.11.11.XX is the IP address of the L4 node L4-Trace.domain.com is the Fully Qualified Domain Name (FQDN) of the L4 Trace node Note that the IPs and names mentioned are examples only.</p> |

| In workgroup topology, to communicate between | Update Hosts file |
|---|--|
| L3 server node in workgroup and remote nodes | <ul style="list-style-type: none"> On Client node, update IP address of Trace Server's IP address On Trace Server, update IP address of Remote nodes |
| Trace L3 and Trace L3.5/L4 | <ul style="list-style-type: none"> On Trace L3 server node, update IP address of the Trace L3.5 server node On Trace L3.5 server node, update IP address of the Trace L3 server node |

SYSTEM SPECIFIC REQUIREMENTS

Experion

| | |
|---|---|
| User privilege | Ensure that your Windows user account used for installation: <ul style="list-style-type: none">• has Local Administrator privileges on the computer• belongs to a domain or workgroup and is part of the following groups:<ul style="list-style-type: none">• Experion DCS Admin group (applicable for domain accounts)• Local Product Admin group (applicable for workgroup accounts) |
| Configure temp qdb file | <ul style="list-style-type: none">• Configure temporary qdb file for R3xx.x, R400.x and R410.x• Ensure that backbuild is not executed manually during Trace Data Collection. |
| Set Display path | Open the Experion PKS Server Configuration Panel from the Start menu and set all display paths |
| Configure switches (for Network View to appear in Honeywell Trace) | <ul style="list-style-type: none">• RO community string configured for all switches must match the switch "Read Community" configured in Configuration Studio and loaded• Configure SNMP in Experion server and in the switch (only SNMP V2 is supported).• Make sure the IP of Remote Node is added to the ACL's in switch configuration.• Top level Yellow and Green switch spanning must be configured (for yellow it is 4096 for green 8192)• Optional: Add RW community string in the switch and update the same under Global Settings in the Data Collection page.• Trace does not support Stack Switch and Cross cable representations. |
| Flex/ES-C/ES-T nodes | On Flex/ES-C/ES-T, you can either install Remote node package or Disconnected Mode. NOT both. |

TPS

| | |
|--|--|
| User privilege | Ensure that your Windows user account used for installation: <ul style="list-style-type: none">• has Local Administrator privileges on the computer• belongs to a domain or workgroup and is part of the following groups:<ul style="list-style-type: none">• Experion DCS Admin group (for domain accounts)• Local Product Admin group (for workgroup accounts) |
| System status | Ensure that the <ul style="list-style-type: none">• LCNP status is OK• checkpoints for all data owners are available on HM• node communicates with Data Server |
| Configure Honeywell File Transfer | <ul style="list-style-type: none">• Ensure Honeywell File Transfer service is installed and is running• Configure Honeywell File Transfer service with all available HMs on the network |
| Check for LVRLOG file | <ul style="list-style-type: none">• Ensure that EST/GUS is configured with UPVLR load module for initiating LVRLOG. |
| GUS Display Builder | If you have references in GUS displays, ensure that GUS Display Builder is installed on the remote node and user configured for data collection can open GUS displays in the Display Builder. |

Safety Builder

| | |
|-------------------------------------|--|
| Safety Builder database path | If performing data collection manually: Copy the Metadata.xml file found at: <InstalledPath>\Honeywell\SafetyManager SMRxxx.x\Metadata.xml to the path where the Plant file (.CAC file) and Controller files (.cc) are located. |
|-------------------------------------|--|

PHD

| | |
|---|--|
| Users must be a part of the Product Administrators group | For a PHD node to perform data collection, install the Remote node package on the Collector node. PHD Data Collection user must be present in PHD nodes (PHD collector, PHD shadow and/or database nodes). |
|---|--|

OSIPI

| | |
|-----------------|--|
| PI OLEDB | For OSIPI node to perform data collection, user must install PI OLEDB in OSIPI node. |
|-----------------|--|

ControlLogix

| | |
|-------------------------|---|
| x® ControlLogix® | To perform data collection, manually export the *.L5X file using RSLogix 5000/Studio 5000 tool. |
|-------------------------|---|

ADDITIONAL REQUIREMENTS

Configure System Time and Time

Zone Changing the Time Zone after installing the Honeywell Trace application affects the functioning of the application.

Passwords

Ensure that the passwords you provide when installing Honeywell Trace have:

- A maximum of 32 characters. (optional)
- A minimum of 8 characters (unless the password policy of your site recommends shorter passwords. It is optional)
- At least one upper case letter. (optional)
- At least one number. (optional)
- At least one special character. However, the following special characters are NOT allowed (mandatory)
 - “
 - /
 - \

Note: Even though the above mentioned password recommendations are either optional or mandatory, refer your Domain/Local system password policy to further confirm.

Server Name / IP Address

prerequisites

- You cannot change Server Name after Trace Server installation. However, you can configure the IP address of Trace Server using the Admin Console.

Honeywell Process Solutions

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Berkshire, England RG12 1EB UK

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Tech Industrial Park, Pudong New Area,
Shanghai 201203