

Honeywell

THE POWER OF **CONNECTED**

HONEYWELL TRACE™

**DOCUMENTATION AND CHANGE MANAGEMENT SOFTWARE
FOR BETTER DECISIONS**



R130 Prerequisites Document



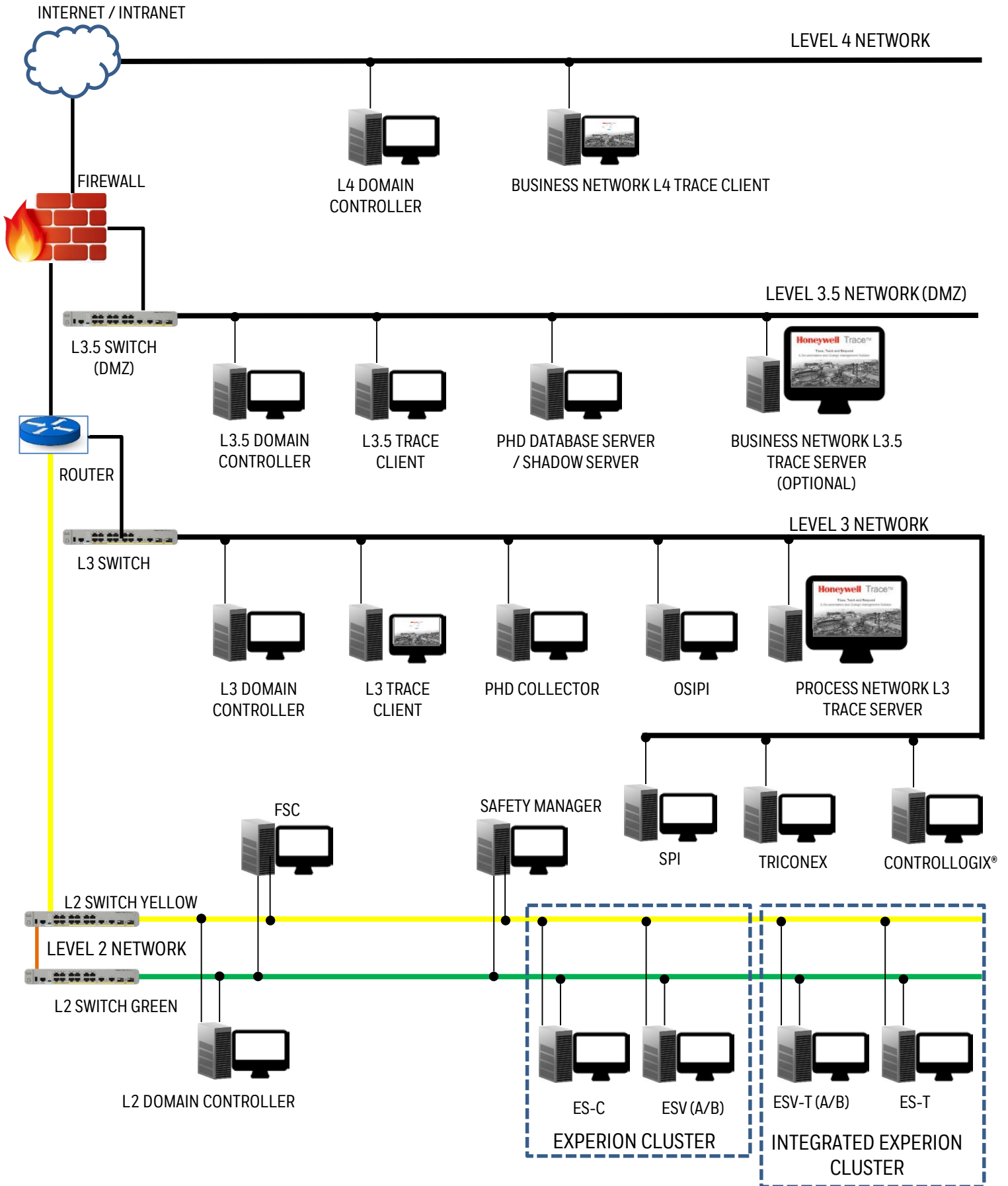
ABOUT THIS DOCUMENT

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

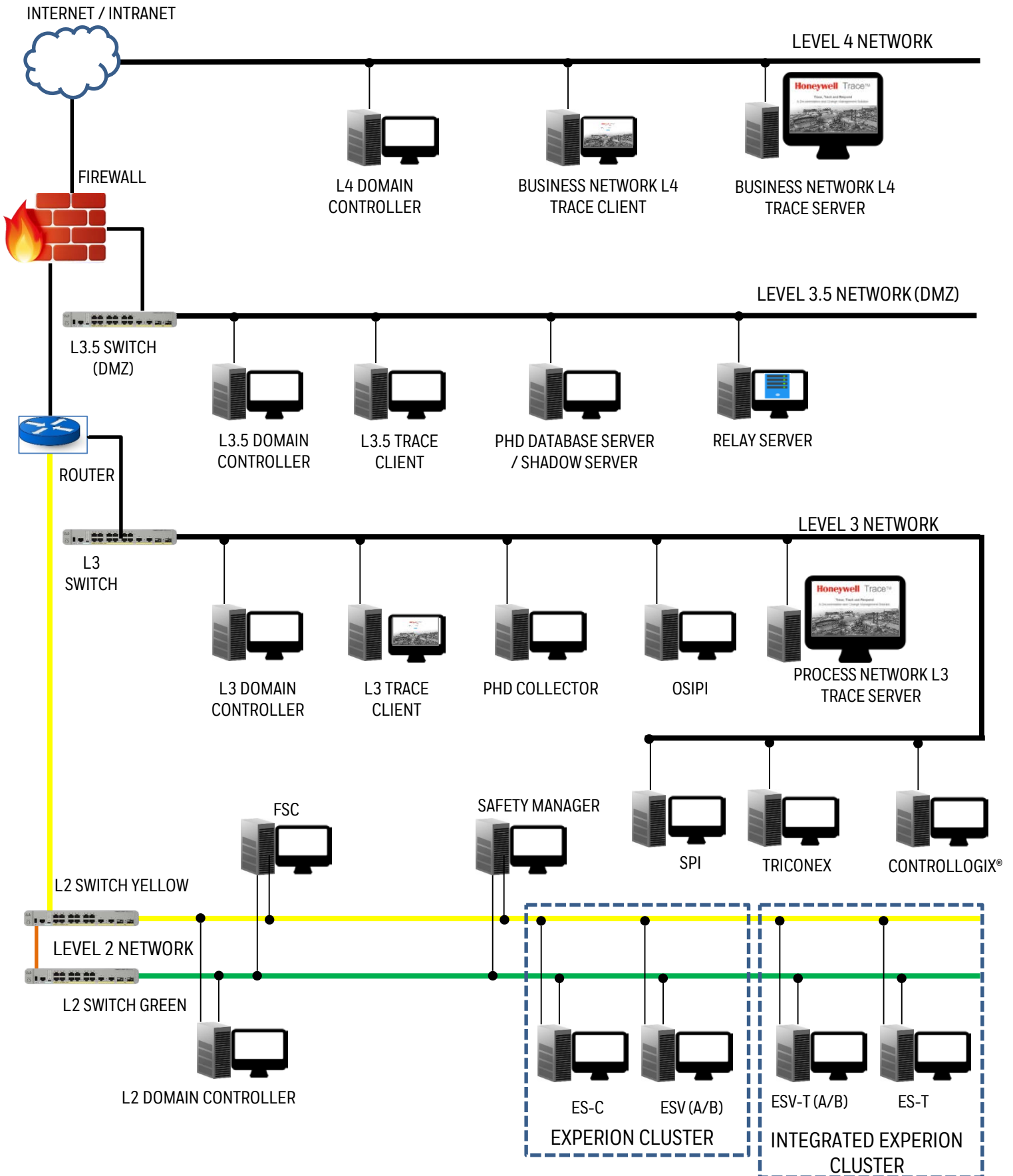
REVISION HISTORY

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

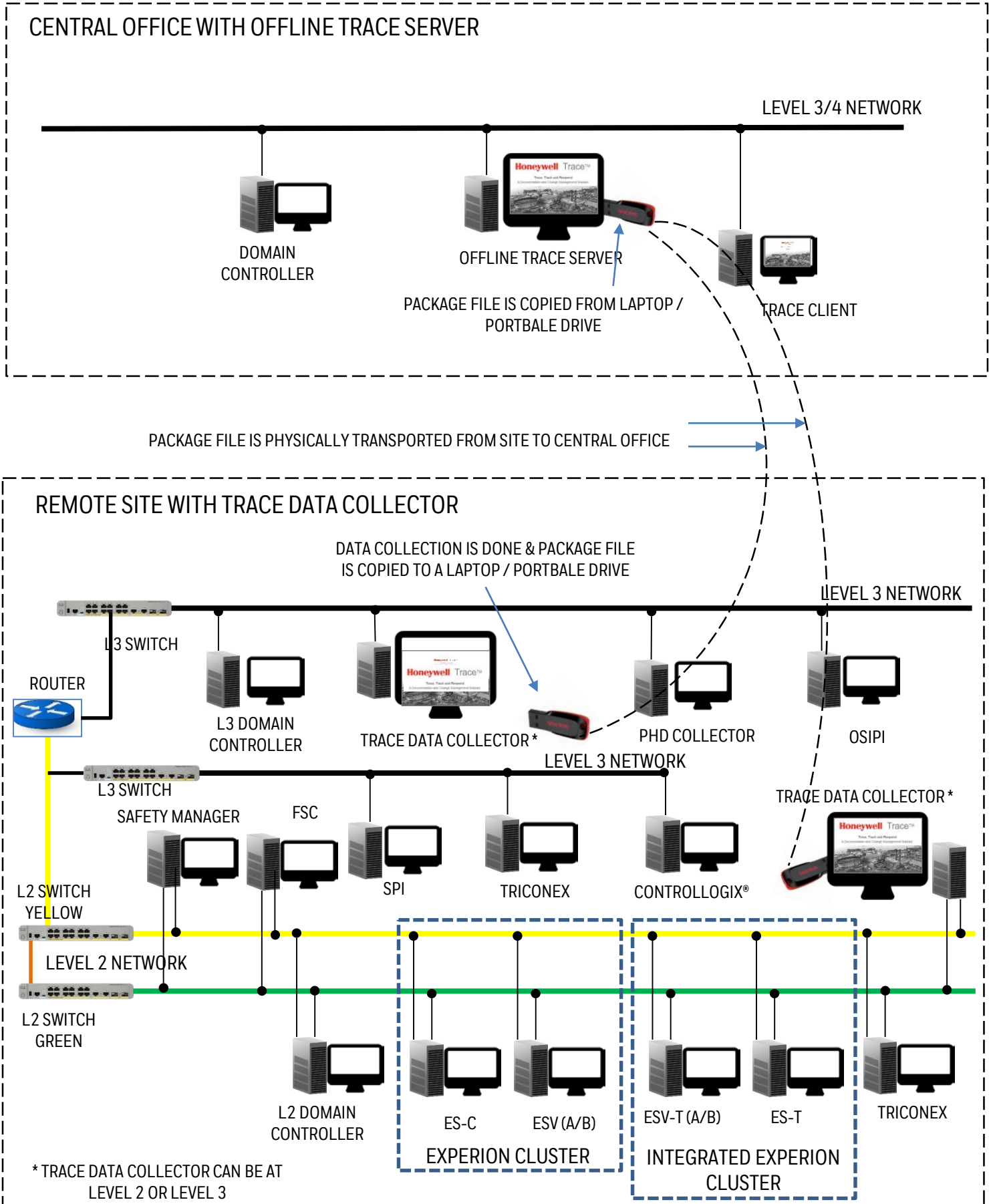
Connected Mode - Honeywell Trace Installed at L3 and L3.5



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		NA	NA	
RAM	32 GB		64 GB				
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 and v4.14	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.

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	On Experion Server B, 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.
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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).
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OSIPI

PI OLEDB	For OSIPI node to perform data collection, user must install PI OLEDB in OSIPI node.
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ControlLogix®

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

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